

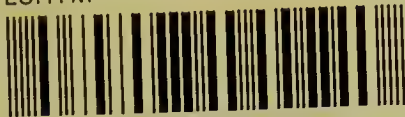
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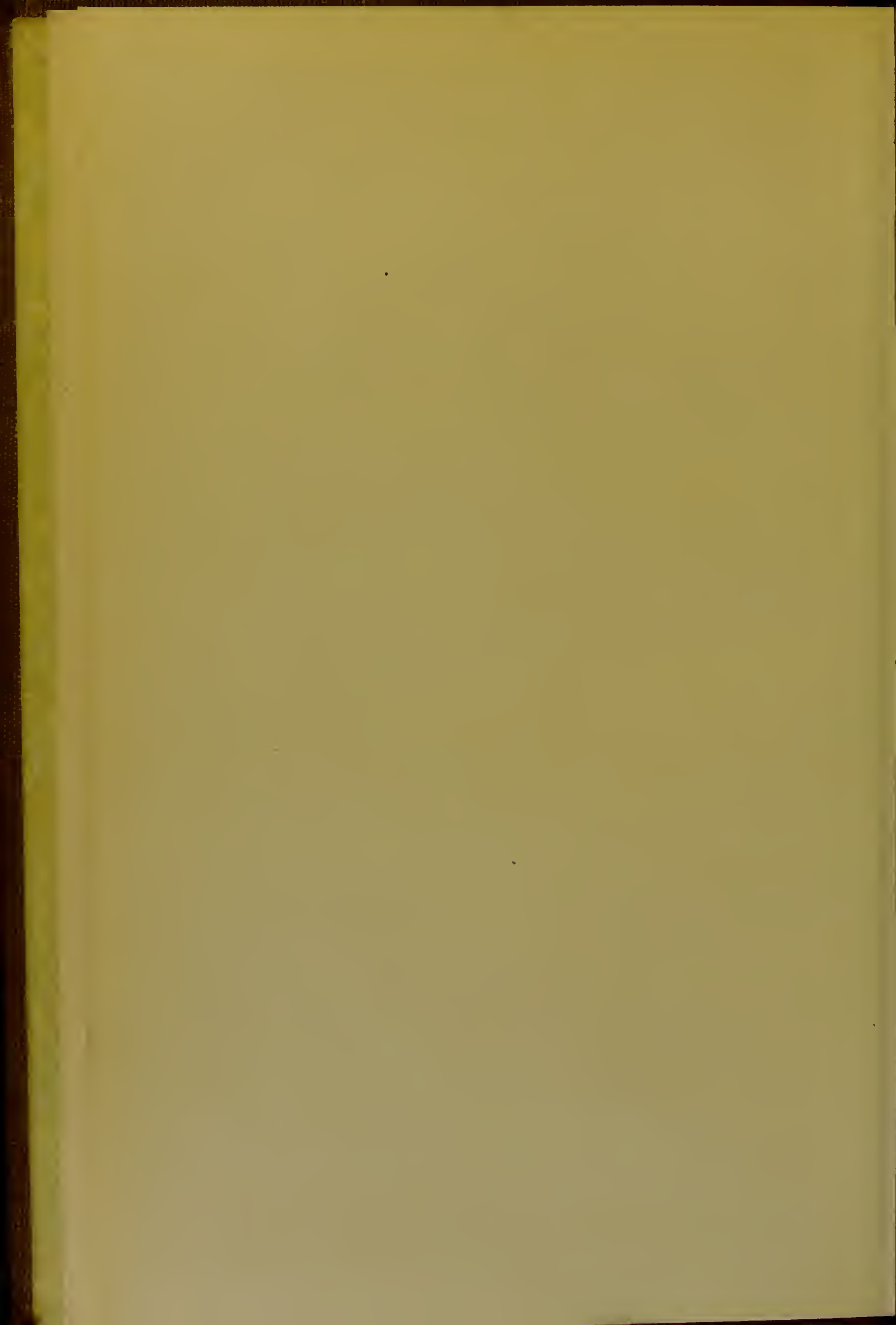


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THE MEAT INDUSTRY
AND
MEAT INSPECTION

THE MEAT INDUSTRY AND MEAT INSPECTION

A COMPREHENSIVE ACCOUNT OF THE PRINCIPAL
ANIMALS AND FISH, INCLUDING CATTLE, SHEEP,
PIGS, POULTRY AND GAME, SUPPLIED TO THE
BRITISH MEAT MARKET, TOGETHER WITH
A DESCRIPTION OF THE VARIOUS IN-
DUSTRIAL PROCESSES CONNECTED
THEREWITH AND THE SCIENTIFIC
INSPECTION OF MEAT

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DOUGLAS'S ENCYCLOPÆDIA FOR THE MEAT, BACON,
AND FOOD TRADES

THIRTY-FIVE COLOURED PLATES
ONE THOUSAND ILLUSTRATIONS

VOLUME V

THE EDUCATIONAL BOOK COMPANY, LTD
210 TEMPLE CHAMBERS, LONDON, E.C.

7533

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CHAPTER I

BREEDS OF POULTRY

Introductory. In this section of the meat industry we have a subject which can be dealt with more or less completely within a fairly limited space, and hence we shall endeavour to give a more or less complete account of all the processes adopted, as well as a description of all the varieties of birds. The poultry-breeder differs from the cattle-breeder in this respect, that he or she is often not only the breeder and fattener for market, but also the slaughterer, dresser, and packer of his or her own produce. It is, therefore, of importance that all these aspects should be considered.

We may first briefly consider the varieties of game, and then the inspection of birds which come under the general description of poultry, finally dealing with the details of the subject from the point of view of the producer.

GAME

The Species Concerned. We have here to consider the animals which are generally grouped together under the head of game, from the point of view of their value and importance, as forming part of the national food-supply, and not at all from the aspect of the sportsman. It may well happen, therefore, that very few words will be necessary concerning certain species upon which books might be written from the sporting aspect, and one or two may even be omitted altogether as being of comparative unimportance to the purveyor of food, or to the inspector, or to the consumer.

The species which fall to be considered in this connection are the following: rabbits, hares, pheasants, grouse, partridges, black-cock, woodcock, snipe.

Average Weight of Game. The average weight of rabbits in good condition, including the skin, is from $3\frac{1}{2}$ lb. to 4 lb.; large ones weigh as much as $4\frac{1}{2}$ lb., very seldom more. Well-developed hares weigh on an average about twice as much as rabbits, that is to say, from 7 lb. to 9 lb.; anything less than 7 lb. in weight is regarded as a small hare, anything over 9 lb. is a particularly fine one. The weight of hares, however, is found to vary very considerably in different districts, depending, no doubt, largely upon the kind and amount of food-supply available and, to some extent, also upon the breeding.

The average weight of pheasants is different in the two sexes. A full-grown cock-pheasant weighs, on an average, from 3 lb. to $3\frac{1}{2}$ lb., the hen bird averaging about $2\frac{1}{2}$ lb. Here again there is considerable

variation in different localities, the birds from some shootings weighing more than these figures. The partridges, on an average, weigh about 1 lb., particularly fine specimens reaching 4, 5, or 6 oz. more.

In the case of grouse the average weight of the cock bird is about 1½ lb., while that of the hen is about 1 lb. It is not uncommon, however, for birds in some shoots to contain many specimens weighing up to nearly 2 lb.

The weight of the woodcock is a very varying quantity, depending largely upon the sex of the bird and other factors. In this case it is the female bird that is the heavier, averaging 13 oz. or thereabouts; while in the case of the male the weight is rarely more than 9 or 10 oz.

The full-grown black-cock ought to weigh about the same as a pheasant, the weight depending a good deal upon the age, and varying from 2½ lb. in young birds to 3 lb. in older ones. Individual specimens occasionally weigh more.

The ordinary weight of the common snipe is about 4 oz. on an average, but many are killed up to 5 oz. or even more.

Inspection of Poultry and Game. It is not very common to find meat inspectors seizing and condemning poultry or game offered for sale, though every now and then certain kinds of game, such as ptarmigan, are kept until such time as they are decidedly "high," a stage of decomposition which apparently appeals to the palate of some consumers, but which the inspector cannot be blamed for seizing, since the same condition in any of the ordinary meat animals would be universally regarded as unfit for food. The proper remedy for this is for the consumer to buy his game fresh and keep it hanging in his own larder until it reaches the particular stage of decomposition which pleases epicurean palates. It is the meat inspector's business to see that all meat exposed for sale is fresh, and not putrid.

In the case of poultry any rapid decomposition which may occur is generally due to the birds having suffered from scour, roup, or gapes, after which the birds do not keep as long as they otherwise would. Commencing decomposition in poultry can be readily detected by the smell and the condition of the skin, which is loose and easily detached, and, in addition, by the greenish tinge which very early makes its appearance over the region of the crop and abdomen.

Enlargement of the Liver in Poultry. In most cases of death in poultry where the cause is undetermined, there is found, after death, a considerable enlargement of the liver. Very often the owner states that nothing was observed amiss with the bird until just before death. Examination of the organ shows great enlargement, a yellowish red colour and a consistence extremely friable. There may be yellowish, definite nodules in the organ. The weight of the liver in these cases varies from three to six times its normal. The cause of the condition cannot be ascribed to any one definite factor, being, doubtless, the result in most cases of errors in diet or from tuberculosis, which, in all animals, make themselves obvious by hepatic alterations. The important point, however, is that

poultry which die as a result of this liver enlargement should not be exposed for sale as food.

Inspection of Turkeys. The remarks made respecting inspection of poultry in general apply also to turkeys; but, in addition, there is a condition well recognised in America known as infectious entero-hepatitis, or popularly as black-head. The lesions produced are those of acute inflammation of the intestines in the region of the cæcum, along with degenerative changes amounting to actual necrosis in the liver. The condition especially attacks young turkeys, producing in time a dark coloration of the comb, wattles, and entire skin of the head. Hence the popular name.

The primary seat of attack is the intestines, from which the liver is infected secondarily. In the latter organ are produced easily recognised areas of a colour indicating all stages of degeneration up to necrosis, these areas being greyish or greenish yellow. The disease is caused by a parasite, the *Amœba melcagridis*, which is a protozoan which can be transmitted from diseased to healthy birds.

Fowl Cholera. This well-known infectious disease of birds attacks not only varieties of domestic poultry such as ducks, geese and turkeys, but is not unknown even in cage-birds. During life the bird shows a roughening of the feathers, drooping of the wings, and a withdrawal of the head, as it were, towards the body, causing the bird to assume a round appearance. The organ affected principally is the liver, which becomes rapidly enlarged, congested, and softened, while the gall-bladder contains thick dark bile. Fowl cholera is especially common during hot weather, at which time the disease, if it breaks out, is apt to cause great havoc in the poultry-yard from its heavy mortality.

THE VARIETIES OF POULTRY

Ancona Fowl. An Italian breed of the Leghorn tribe, which it closely resembles. The Ancona is smaller than the Leghorn and of very sprightly carriage. The ground colour is black to beetle-green, each feather having a V-shaped white tip. The ear-lobes are pure white, the legs yellow, mottled with black. Anconas are very prolific layers of white eggs, are non-sitters and extremely hardy. Average weight: males, from 6 to 7 lb., and females, 5 to 6 lb.

Andalusian Fowl. A variety of Spanish origin, but more game-like in shape and carriage than the Minorca or Leghorns. In the cock, hackle-, saddle- and sickle-feathers are black; breast of a slaty blue, each feather clearly laced with black; the straight tail-feathers blue, to match the breast; comb straight and evenly serrated; ear-lobes white in both sexes. The ground colour of the hen is slaty blue, each feather distinctly laced with black; hackle jet-black; comb evenly serrated and laid over to one side, but not coarse or fleshy. Legs in both sexes very dark leaden colour. Weight, 7 to 8 lb. in males and 6 lb. in females. Andalusians mature quickly, are non-sitters and excellent layers

of large eggs, and are very handsome and useful. A peculiarity of the Andalusian is that the chickens come of three colours, blacks, whites, and blues, only about 75 per cent. coming blue. It should be clearly understood that blacks and whites are no sign of crossing or impurity in the breed.

Aseel. One of the oldest existing domestic breeds of poultry; the fighting game of the Indian princes. The Aseel resembles the Malay



BRAHMA LIGHT COCK

somewhat in its broad, prominent shoulders, drooping tail, and short, narrow feather, but is much shorter on the legs and is an extraordinarily powerful bird, very heavy in comparison to its size. Though the Aseel makes a good table cross, yet it is more of a fancy than a utility breed; the hens are very poor layers, and so great are the fighting proclivities of the breed that the chickens begin to fight and kill each other while yet running with the hen. The principal colours are red, black, grey, spangle, yellow, and white.

Bantam Fowl are miniatures of various breeds; in fact almost all breeds have their counterpart amongst bantams, so that the existing varieties and sub-varieties are very numerous. Bantams are usually classed as "Game Bantams" and "Variety Bantams," the latter class including all bantams corresponding to the larger breeds, such as Plymouth

Rock, Indian Game, Cochin or Pekin, and several varieties which have no prototype amongst larger fowl, such as "Sebrights." Bantams are scarcely utility fowl except so far as they may be used for hatching and rearing pheasants and partridges or the chickens of larger breeds. Bantam eggs are often used for children and invalids.

Barbezieux Fowl. A French breed of poultry somewhat like the Minorca in appearance. The hens are good sitters and mothers and good layers. The chickens are easily fattened and considered hardy.

Bourbourg Fowl. A French breed kept chiefly in that district lying between Calais and the Belgian border. It is a most useful breed for early laying and table qualities; mature specimens weigh from 6 to 9 lb. In colour it is what the French call "ermine," the colour of the Light Brahma. The Bourbourg resembles the Ermine Faverolles; in fact it is called "The Faverolles of the North."

Brahma Fowl. An Asiatic breed of very ancient origin; a very large variety, hens weighing up to 10 lb. and cocks 11 lb. The Brahma is very deep and squarely built, and has very profuse plumage and yellow legs, heavily feathered. The comb is triple, or "pea," and small. Brahma chickens are very easily reared, and the hens are fair layers of brown eggs. Many of the most popular utility breeds of the present day, such as Faverolles and Wyandottes, owe their origin in part to the Brahma. Pure-bred Brahmas are not amongst the first ranks of table breeds, but when crossed with the Dorking or Old English Game a very excellent table-bird is obtained, and the cross-bred chickens have all the hardiness of the Asiatic parent. There are two varieties of Brahma, the light—a white fowl with black striped hackle and black tail; and the dark—a grey, pencilled variety.

Bredas or Gueldres Fowls. A breed of poultry kept in Belgium and the Netherlands, said to be hardy and good in flesh. The greatest peculiarity of these birds is that the comb is entirely absent.

Bruges or Combattant du Nord may be called the Game Fowl of Belgium and Flanders. In some respects it resembles the Indian Game and Malay, being heavy in build, but in its activity, colour, and general habits it is much like the Old English Game Fowl. It is a table-bird of good quality, but a poor layer.

Brackel. A Belgian fowl closely allied to the Campine.

Campine Fowl. A Belgian breed, which derives its name from the Campine district near Antwerp. The Campine resembles the pencilled Hamburg in markings, except that the black bars are wider and the eye very dark. Campines are a small breed and are excellent layers of fair-sized, white eggs, and are non-sitters and very hardy. The chickens are extremely precocious and, though small, are very plump and of excellent flavour. There are two varieties of Campine, silvers and golds; their markings are identical except that in the golds, "gold" is substituted for the white in the silvers. The hackle and saddle of the cock are white; tail black, with mackerel markings; breast and wing-bars white ground colour, barred with black or beetle-green.



SILVER-GREY DORKING COCK

The hen's body is all barred except her hackle, which is white. The comb is single, upright in the cock and falling over in the hen ; ear-lobes white, legs leaden blue.

Cochin Fowl. An Asiatic breed of poultry originally imported from Shanghai. The Cochin may be called the "father of the poultry family." Prior to 1850 poultry were only kept by farmers, but after the first Cochins were exhibited at Birmingham, in that year, a regular "poultry mania" became prevalent throughout the country. At the present time the Cochin has become more of a fancy than a utility bird owing to its heavy foot feathering and great tendency to broodiness, but though now it can scarcely be classed as a utility breed, most of our best breeds owe their origin to the Cochin, including all the buff varieties of fowl and many other coloured breeds, such as Wyandottes, Plymouth Rocks, Orpingtons, &c. The Cochin is a good winter layer, but becomes broody after laying about a dozen eggs ; the eggs are of a rich brown colour. The buff is the most popular variety of this breed, and there are partridges, whites and blacks. Cochins are very large, deep in body and massive, the largest of all breeds, and are very profusely feathered on body and legs. The comb is single and rather small. Weight of cock, 12 lb. ; hen, 10 lb.

Coucou de Malines Fowl. The most notable variety of Belgian table-fowl, known when dead as "Poules de Bruxelles." This breed somewhat resembles the Plymouth Rock, being large and heavy in bone and

rather long in legs, which are flesh-coloured and slightly feathered. The comb is single, small and upright. The hens are fair layers of tinted eggs, and good sitters. The flesh is of excellent quality. Unfattened males weigh about 9 lb. There are two varieties, cuckoos and whites.

Courtes Pattes. A French fowl allied to the La Flèche and Du Mans varieties. Courtes Pattes are black, bearded birds with white ear-feathers and white lobes. The comb is single, and the legs are thick and grey. It is said to be a good layer and seldom to become broody. A dish called "Poulets à la Reine" made with these birds can be obtained in the Paris restaurants at certain seasons of the year.

Crève-cœur Fowl. One of the oldest French breeds of poultry, much resembling the Houdan and Polish in type. The Crève-cœur is black, with black or blue legs and four toes on each foot; it has a full crest, beard and muffling, and a two-horned, V-shaped comb. It is a good layer of very large white eggs and a table-fowl of excellent quality; a useful cross with Brahmas or Rocks. When breeding from Crèves and all heavy-crested birds, it is advisable to cut off or tie up the crest.

Dorking Fowl. The oldest English table-fowl, imported at the time of the Roman Conquest of Britain. The Dorking is a very large, deep-bodied bird with a long breast-bone, white legs free from feathering, and



PRIZE DARK DORKING COCKEREL

five toes on each foot. The comb is single and erect in the cock and falling over to one side in the hen, and should be of fine texture. The flesh is of excellent quality, juicy and tender. Adult cocks weigh 12 to 14 lb., and hens 9 to 10 lb. Dorkings thrive best on dry, light soil, and are largely kept in the south of England. As they are unsuited to damp, and rather delicate as chickens if kept on heavy land, this breed is not largely kept in Ireland. The hens are fair layers of large white eggs and sit well. The Dorking, being of such ancient origin, has great prepotency, and is able to stamp its characteristics on its progeny; therefore Dorkings are very much used for crossing, especially with the yellow-legged, hardy breeds, to improve the table qualities of the progeny and still to retain the hardiness of the yellow-legged varieties, such as the Plymouth Rock, Brahma, Wyandotte, &c. An Indian game-cock mated to Dorking hens is the most popular of all the table crosses, and produces a bird of great size and quality, carrying a great proportion of breast-meat. There are several varieties of Dorkings, dark or coloured and silver-grey being most largely kept, white- or rose-combed Dorkings and Cuckoos, the latter being seldom seen. The dark variety is, perhaps, the largest and most vigorous in colour. The cock's hackle and saddle are straw-coloured striped with black; back, various shades of straw, black and white or grey, sometimes mixed with maroon; breast, glossy black, with thighs and fluff to match; tail black. The legs must be perfectly white. Single combs are usually seen, but rose combs are permissible in Dorks. The colour of the hen is a dark brown, nearly black; the hackle is white or straw, with black stripings; and the breast salmon-red, each feather tipped with dark grey. The silver-grey cock has white top colour as free from dark striping as possible; the breast and under parts are black. The silver hen is slate-grey on back and wings, with white hackle slightly striped with black; the breast is bright robin- or salmon-red, shading off to ashy colour on the thighs. In silver Dorkings the comb must be single.

Estaires Fowl. A breed of poultry common in north-eastern France, having many of the Langshan characteristics, to which breed it owes its origin. The Estaires is a black fowl, with a large breast and short, pointed tail; the legs are dark and slightly feathered.

Faverolles Fowl. A French breed of comparatively recent origin, which has become most popular in France, England, and Ireland in a remarkably short time. The Faverolles resulted from crossing various breeds with a view to obtain a good table-fowl, quick growing, easy to rear, and a good layer. This was done by crossing Dorkings and Brahmas with Houdans until a good utility breed was obtained. The fifth toe and single comb of the Houdan and Dorking were retained, also the beard and muffling of the Houdan, but not its crest, and the slightly feathered legs and great hardiness of the Brahma. The Faverolles usually bred now is the "Salmon," the cock being straw-coloured on hackle and saddle; straw, black and brown on back; and black on beard, breast, and under parts. The hen is wheaten-brown on back,

tail, and wings, and has a creamy white breast and under parts, and a full beard, creamy white, same colour as the breast. The wheaten-brown on her back should merge softly into the breast colour, and the hackles should be quite free from black striping or ticking. Faverolles are very easy to rear, fatten easily, lay well and are one of the most useful breeds. When Faverolles first became popular, the Ermine or white and black variety was often seen, but this seems to have been superseded almost altogether by the salmon. Black Faverolles are now being bred and are occasionally seen at shows, but are not likely ever to become very popular.

Friesland Fowl. A race nearly altogether confined to Holland and Germany; it seems to be allied to the Hamburg, but is larger. It is a good layer, hardy, and a good forager. Several colours are bred, such as gold and silver, pencilled, white, black, and cuckoo.

Frizzles Fowl. A peculiar variety of poultry, having their feathers curled back, giving them a quaint appearance, each feather remaining in a permanent little curl except the hard wing and tail feathers.

Frizzles are very hardy and are good layers, but are usually rather small; they may be any colour—white, brown or partridge or grey being the commonest. This breed is found in Southern Asia, the Eastern Archipelago, Ceylon, and Mauritius.

Gallus Bankiva. The wild fowl of the jungle from which our domestic breeds of fowl probably originate. The jungle fowl somewhat resembles the black-red game fowl in colour.

Game Fowl. One of the most ancient breeds of domestic poultry. Cæsar tells us the British kept fowls for "pleasure" and "diversion," which can only mean for fighting, as at the time of the Roman Invasion it was against the British laws to eat the flesh of fowls. Cock-fighting was probably introduced into Britain by the Phœnician traders. In India there are records of cock-fighting dating back to at least 1000 B.C. Cock-fighting became illegal in England about 1835, but even to this day a certain amount of it is carried on surreptitiously. At present there are two kinds of game, Old English and Modern, the latter being only for ornament and exhibition; these are slimmer and longer on the legs than



BROWN-RED GAME COCKEREL

the Old English or Fighting Game, which are now also used for exhibition. There are a great number of sub-varieties and colours of game fowl; those most often seen are black-breasted reds, brown-reds, and Duckwings. The game fowl is useful for a table cross with Dorkings, Rocks or any of the Asiatic breeds; the flesh is very delicate in flavour, but owing to the pugnacious nature of the cocks they are difficult to keep.

Goumay. One of the smallest of the varieties of French poultry, a good layer of large eggs. The colour resembles the Houdan, but the Goumay has four toes, single comb, and no crest.

Houdan. One of the most popular French breeds of poultry, of great economic value; a good layer of large eggs and a table-fowl of the highest quality, fertile and easy to rear. The Houdan has five toes on each foot, and has been spoken of as the "French Dorking." The cocks weigh 8 or 9 lb., and hens 6 or 7 lb. The colour of the Houdan is black with white mottlings, legs pinky white with bluish mottlings. The comb is peculiar and resembles a butterfly with open wings; the head is surmounted by a large crest, and the birds have a full beard and whiskers. Houdans are very useful for crossing, both to improve laying and table qualities, but owing to the large crest this breed is, in its pure state, unsuited to a damp situation.

Hamburg Fowl. Under this name are classed two breeds which seem to be of totally different origin, viz., pencilled Hamburgs, Golden and Silver, which were first introduced into England from Holland under the name of Dutch Everyday Layers; while the Golden- and Silver-spangled Hamburgs and the Blacks originated in Lancashire and Yorkshire and were called "Mooneys," from their round moon-like spangles, or Pheasant-fowl. Hamburgs are a small, sprightly breed, with rose combs ending in a long spike, and have round white ear-lobes and leaden-blue legs free from feathers, and are good layers and non-sitters. They thrive best on a free range and must have plenty of house-room, but if at all crowded they are subject to roup. To breed exhibition Hamburgs successfully, a system of double mating is required, the best cockerels and pullets being bred respectively from different strains or families of the same breed. Black Hamburgs are the most useful of the above group of fowl, being larger and hardier, and the eggs of a better size. Many useful crosses can be evolved from the Hamburg.

Indian Game Fowl, sometimes called Cornish Game. A breed of fowl well known for years in Devonshire and Cornwall before they spread to other parts of the kingdom. This breed is essentially a table-fowl, and is very much used for crossing for this purpose. The Indian Game Fowl is a very handsome breed with a thick, compact body tapering towards the tail; a broad, deep and well-rounded breast; short wings carried close up; and tight, hard, glossy feathers and stout yellow legs. The whole carriage is very upright. The head, breast, and under parts of the cock are rich green-black; hackles and saddle, black streaked with rich bay or chestnut; the tail is green-black. The general characteristics of the hen are somewhat similar, but her colour is different. Her head

and upper hackles are rich green, but, lower down, the centre of each feather becomes chestnut; the body colour is a rich chestnut, every feather being distinctly laced with lustrous green-black, so that the lacing appears to be raised or embossed. This lacing is usually single at the throat, but, lower down, as the feathers get larger, and on the back and wing-bones, the lacing is usually double, each feather having a second or inner lacing. The comb is small and triple, or "pea," but very often the cocks are dubbed. Indian Game are not amongst the best-laying breeds; the eggs are very rich in flavour, and buff or tinted. The hens are good mothers and sit well.

Java Fowl. A black breed chiefly kept in America; a large hardy breed from 8 to 10 lb. weight, one of the original progenitors of the Plymouth Rock. The Java blood is very prepotent, and still shows itself on the female side by the fact that Barred Rocks of the very best breeding often throw black pullets. Javas are good table-fowl, good sitters and mothers and lay well. They are seldom seen in England.

Jersey Blues. A new Jersey breed of poultry of the colour of the Andalusian and resembling the Plymouth Rock in economic qualities.

La Bresse Fowl. One of the principal French varieties of table-fowl; a breed resembling the English Leghorn, but with smaller combs and carrying more breast-meat. La Bresse poulardes and capons have a great reputation for the delicacy and quality of their flesh, and "Poules de la Bresse" are to be found on the menus of the best hotels in France, Italy, and Switzerland. There are blacks, whites, and greys, the former being considered the best table-fowl. The La Bresse is of very slender build, and is more valued for quality than for size. It is also esteemed an excellent layer, and a pen of the white La Bresse took second place in a recent laying competition of the English Utility Poultry Club. The legs are blue. La Bresse are hardy and well suited to most situations.

Lakenvelder Fowl. A variety of considerable antiquity coming from Holland and North Germany. Lakenvelders made their appearance in England in 1901. They are good layers but the eggs are small, and the breed cannot be said to be a utility one. Lakenvelders are white birds with black hackles and tails, and the legs are blue.

La Flèche Fowl. A French breed which has never become popular in England owing to its unsuitability to the climate. This breed seems to be of Spanish and Polish origin. It is a tall black fowl of good size, with a comb consisting of two small horns standing nearly upright; the ear-lobes are round and white. It is a fair layer of white eggs, but will not thrive except on dry soil.

Langshan Fowl. An Asiatic breed imported from the Langshan district in China, and is a very old breed and one that is very prepotent in stamping its characteristics on its cross-bred offspring. When Langshans were first imported and bred by Major Croad, they were shorter on leg and of a more Dorking type than the present-day exhibition bird, which is bred very long in leg and tight in feather, probably the result

of a game cross. These two varieties are known now as "Croad Langshans" and Langshans or "Modern Langshans." The Langshan was used by Mr. Cooke in originating the Black Orpington. Langshans are black fowl with single combs; red ear-lobes; black, slightly feathered legs, showing pink between the toes. They are excellent white-fleshed table-fowl and good layers of deeply tinted eggs, of which they yield a



BROWN LEGHORN COCKEREL

good supply in winter. Like other Asiatics, they are hardy and easy to rear. There are also blue Langshans and whites, but they are not very common.

Leghorn Fowl. An Italian breed imported into England through America, where they were first known in 1853, having been imported from Leghorn to Boston. They reached England in 1872. The Leghorn family includes some of our most useful laying breeds of fowl, and are extremely hardy. There are several varieties of the breed, viz., whites, browns, blacks, cuckoos, piles, Duckwings, and buffs, the two former being most popular. Leghorns have large combs, upright in the cocks, and falling over to one side in the hens, white ear-lobes and yellow legs free from feathers. The carriage is graceful, alert, and sprightly. They are non-sitters, and the eggs are large. The white Leghorn, being a self-

colour, is easier to breed than the brown, and is the most popular. Brown Leghorns have about the same economic value as the whites and are very handsome, the cock being of a rich bay colour with a black breast and tail, much resembling the black-breasted red game in colour. The hen is of a soft light brown on the back, finely pencilled with black and



BLACK LEGHORN HEN

free from rustiness or red tinge; the breast is salmon, shading off on the thighs into an ashy grey; the hackle is golden striped with black. Pile and Duckwings Leghorns are of the same colour as the game of the same name, and for breeding these and browns a system of "double mating" is required. Cuckoos are seldom seen, but blacks are steadily gaining in favour.

Lincolnshire Buff Fowl. A breed indigenous to Lincolnshire and Sussex, which seems to combine Cochin and Dorking blood. Buff Orpingtons are supposed to have been originated from these buffs by careful breeding and selection, with the introduction of other crosses.

Malay Fowl. An Asiatic variety, very large and tall, cocks sometimes measuring thirty-eight inches from beak to toe. The Malay characteristics are: fierce head, with strong curved beak and beetling

brows; great height and strong legs; prominent shoulders; narrow feathers; and what is known as the "three curves" formed by the neck, back, and tail. The Malay is a good table-fowl, having a great weight of solid meat, and is sometimes used for crossing, though it has been very much superseded for this purpose by its offshoot, the Indian Game. The hens are not very good layers, but are very trustworthy mothers to their *own* chickens. There are various colours of this breed, the most popular being the black-breasted red cock and cinnamon or partridge hen; the former has a purplish hackle and should be free from spots or lacing



WHITE ORPINGTON PULLET

on the body. The eyes are either pearl, yellow, or daw, but not red. The comb is small and neither single, rose, nor pea, but resembles half a walnut-shell; the ear-lobes and wattles are small and red; feathers very tight and narrow; the breast is usually bare in the centre.

Minorca Fowl. A breed imported into Cornwall from Minorca about 1830 and, strange to say, scarcely known outside this corner of England until 1883, when it began to spread rapidly, and is now one of the most popular of the laying breeds, producing a plentiful supply of very large white eggs. The combs are single and large, upright in the cock and falling over in the hen; the legs are very dark slate colour and the plumage glossy black. There are also white Minorcas, and the black variety will sometimes throw a white sport. When the chickens of blacks are hatched, they are usually black and white. The flesh of Minorcas is white and juicy; though they cannot be classed as a "table variety," yet they are not to be despised in that capacity. Minorcas are very much used

for crossing to improve laying qualities; they are non-sitters. The earlobes are white, but white spots on the face are a disqualification.

Naked Necks Fowl. A curious breed imported from Austria. As the name indicates, the neck is entirely devoid of feathers; the skin is red; the bare neck ends at the shoulders in a frill of feathers with a tuft in front. The bare neck is a prepotent feature of the breed, and appears very tenaciously in its crosses. From a utility point of view this strange breed is considered valuable, being a good layer of large eggs, a satisfactory table-fowl, and the chickens are particularly hardy and



BUFF ORPINGTON PULLET

thrive in bad weather, their ancestors having been reared on the rugged Carpathian Mountains.

Orpington Fowl. A very important and popular group including several varieties, viz., blacks, buffs, whites, jubilee, and spangled. These varieties are in some cases of quite different origin. The Black Orpington was the original breed of this name, and was first brought before the public by Mr. Cooke, of Orpington in Kent, who declared it to be produced by mating a Minorca cock to Black Rock hens and crossing the progeny with a clean-legged Orpington, thus combining all the useful qualities of these breeds. Mr. Partington brought an "Orpington" about 1891 of different extraction, but evidently possessing Cochin and Langshan blood and having great size. The Black Orpington is a very

large, useful breed, a good layer of tinted eggs and a good table-fowl. Cocks weigh 9 to 11 lb., and hens 7 to 8 lb. Orpingtons have four toes on each foot; the legs are black and free from feathers; the face is red and comb single. Rose combs are permissible but not so popular as the single. The plumage is lustrous black, with a rich green sheen.



BUFF ORPINGTON COCK

The body is deep and broad, back short, with short legs—a cobby, compact bird.

Buff Orpingtons were also originated by Mr. Cooke from crosses of Dorking, Cochin, and Lincolnshire or Sussex Buffs, or by a mating of golden-spangled Hamburg cock and coloured Dorking hen, and crossing the progeny with a Buff Cochin cock. Whatever differences of opinion may exist with regard to the origin of the Buff Orpington, there is no doubt that it is one of our most popular and useful breeds, combining laying and table qualities. Buff Orpingtons are large birds, of fine quality, with white skin and legs. As in blacks, either single or rose combs are permissible, the rose combs not being very popular. They are good

sitters and careful mothers, and are hardy and an easy fowl to fatten, and very popular as a table-fowl, either pure or crossed. The White Orpington is fast becoming very popular, and is one of the most useful general-purpose breeds. Jubilee Orpingtons are said to have been originated from a cross between Old English Spangled Game and Dorkings,



BLACK ORPINGTON COCKEREL

and somewhat resemble the Speckled Sussex. Spangled Orpingtons are black-and-white mottled.

Orloff Fowl. One of the most important varieties of poultry in Russia ; a large bird not unlike the Indian Game in shape, but deeper in breast. The Orloff has a very round head without any sign of crest, but a very large and full beard and whiskers ; below the head the hackle swells out spherically, but at the base of the neck the feathers lie close. The colours are dark red with a wonderful sheen, speckled and white.

Pavloff Fowl. A Russian breed with some resemblance to Polish, but having smaller crests. There are two varieties, the golden and silver.

Plymouth Rock Fowl. A breed originated in America and introduced into England about 1870. This breed owes its origin chiefly to the Dominique and Black Java, but Brahma and Cochin blood was also

introduced. The Black Java blood was always introduced on the female side, and to this day keeps constantly asserting itself, Barred Rocks being very liable to throw black sports, which are almost always pullets. The Barred Rock is a large fowl, deep and compact in body; the legs are of moderate length and bright yellow, free from feathers; the comb



WHITE "ORPINGTON" COCK]

is single and not too large. The English standard gives the colour as "greyish white," evenly barred with bluish black, free from rust or smutty colour. Barred Rocks are a most useful and profitable breed, being excellent layers of tinted eggs, not given to over-much broodiness, large heavy table-fowl, easy to fatten and very hardy. Probably no breed is so well suited to heavy soil and damp situations as the Barred Rock. They are extremely popular in Ireland, and form the basis of a large portion of the best table-fowl sent over from that country. There are also Buff and White Plymouth Rocks, resembling the Barred variety except in colour, and both useful and profitable breeds. Black Rocks are also bred as a distinct variety.

Polish Fowl. A handsome breed of poultry, of which the chief characteristic is the peculiar skull formation, consisting of a round protuberance in the bone of the skull, which is plainly visible in the chicken

but in adults is covered by a large and full crest. Polish are good layers but are delicate to rear, being unable to stand damp; the large crests require care, and have either to be cut off or tied up during the breeding season. Some fanciers fasten up the crests with rubber rings, but tying with thread pulled through the feathers here and there to give firmness is the usual method. If left loose, the crest in good specimens interferes with the sight, and the birds can scarcely see to feed. Polish are more of an ornamental, or exhibition, than a utility fowl, but almost all the French breeds owe many of their useful qualities to the Polish blood, of which they show unmistakable traces. Polish fowls have declined greatly in popularity in England as exhibition birds, and about 1855 many varieties and colours were known which are now lost sight of. At present the generally recognised varieties are Gold- and Silver-spangled, White-crested Blacks, and Chamois or Buff-laced and White-crested Blues. Black Polish have the large white crests, but no beard, which is well developed in the other varieties. The comb consists of two small horns.



PRIZE BARRED ROCK COCKEREL
(Miss MacQuillan, Wexford).



BARRED ROCK COCKEREL
(1st Prize, 1908, Miss MacQuillan).
Photo by Noel Waring.

Red-Cap Fowl. A variety principally bred in Yorkshire and Derbyshire, closely allied to the Hamburg; an old breed, possessing very useful qualities. Red-Caps are active, long-lived and very hardy, and are good layers of large eggs. The flesh is white and of delicate flavour. Cocks weigh from $7\frac{1}{2}$ to $6\frac{1}{2}$ lb. The comb is a large rose-comb, full of fine "work" on spikes. The colour of the cock is much like a black-breasted red game-cock, and the hen is a rich red-brown, spangled with black; the legs are slate-coloured.

Rhode Island Red Fowl. An American variety whose evolution is on a parallel with the Buff Orpington in England. This breed was kept as a farmers' fowl in Rhode Island, and was taken up by fanciers and bred carefully to a standard, and improved by the introduction of new blood from other breeds. The Rhode Island Red is a very useful variety, very hardy, an

excellent layer and table-fowl. The cock's colour is a bright cherry-red with black tail, and the hen a lighter or golden red with black tail, and black tips at the base of the hackle.

Rose-comb Blue Fowl. A popular breed in Northern and Midland counties of England. This bird is of Andalusian colour, and appears to be allied to the Blue Langshan.

Rumpless or Tailless Fowls. Known in India and China and the



PARTRIDGE WYANDOTTE COCKEREL

West Indies. In some of these countries, in certain districts, the fact that most of the fowls are without tails is a curious parallel to the tailless race of cats in the Isle of Man. Rumpless fowls are said to be hardy and prolific.

Scotch Dumpie Fowl. An old breed, also called Bakies and Go-laighs. Dumpies have a large single comb and red ear-lobes, and take their name from their very short legs, which rarely exceed $1\frac{1}{2}$ inches. The cock weighs 7 or 8 lb. and the flesh is exceedingly tender and juicy, surpassing that of Dorkings according to some authorities. The hens are good layers and kind, gentle mothers. The colour is rather varied; silver-grey, dark Dorking colour, cuckoo, and black are preferred. In

the former colours the lips must be white, but may be slate in the blacks; the body must be large, low, and heavy. Rose combs are allowable.

Scotch Grey Fowl. An old and valued breed sometimes called the Scotch Dorking, but its carriage is more sprightly and resembles the Game. The plumage closely resembles that of the Barred Rock, but the barring is narrower and like the Rock; black pullets and light cockerels are often produced. The Scotch Grey, or "Chick Marley," as it is sometimes called, is a very useful, hardy breed, a good layer and good table-fowl. They are restless and active, and do best on a free run.



PARTRIDGE WYANDOTTE PULLETS

The shanks are white, or may be mottled with black. Cocks weigh 9 to 11 lb. and hens 7 to 9 lb.

Silkie Fowl. A peculiar breed with flossy hair-like feathers, and deep violet-coloured skin; the comb and face are deep mulberry colour, and the ear-lobes turquoise-blue. The legs are blue and slightly feathered, and have five toes. Silkies are an Asiatic breed, and in some respects the type resembles the Cochin. They are not classed as Bantams but are now bred very small, from 2 to 3 lb. in weight. The flesh of the Silkie is very palatable, but the black colour of the bird, when cooked, is greatly against it as a table-fowl. Silkies are very good and frequent sitters, and are greatly in request for rearing bantams or pheasants. The crosses between Silkies and other breeds are also excellent mothers and good winter layers, but the strong black blood asserts itself for many generations, though the Silkie plumage does not usually appear in the crosses. The Silkie is hardy and easy to rear, and lays a fair-sized egg. The crests are small and do not interfere with the sight. The best method of cooking surplus chickens of this breed is to "jug" them in the same way as hare.

Spanish. The oldest of the Mediterranean families of fowl ; at one time very popular in England and Ireland as a good layer of very large eggs, but now kept almost altogether for exhibition only. The Spanish fowl was probably introduced into England in the reign of Philip. The Spanish fowl is large and tall and of a lustrous black, but its chief characteristic is its white face ; not only are the ear-lobes white, but the whole



SILVER WYANDOTTE COCK

face is of the same colour, the comb and wattles being red. Spanish are delicate and difficult to rear. Like the other Mediterranean breeds, they are non-sitters.

Sultan Fowl. A breed belonging to the Polish family. They were first imported into England in 1854 from Constantinople. The Sultan is a white fowl with a round, globular crest and full beard ; the comb consists of two small horns. The legs are well covered with feathers, and the toes are five in number ; the skin of the feet and legs is pale blue ; the comb, wattles, and ear-lobes are red. Cocks weigh about 6 lb. and hens $4\frac{1}{2}$ lb. This breed is fairly hardy and easy to rear, and the hens lay plenty of good-sized eggs. The Sultan can be recommended to those who wish for beautiful and useful pets of the gallinaceous race.

Sumatra or Black Sumatra Game Fowl. They were first imported

from Sumatra to America and thence to England. This breed of fowl has lately become popular and is a very handsome variety, the plumage being of a very brilliant green sheeny black. The comb is triple, and that and the face are "gipsy" colour, or nearly black. The legs should be olive and the eyes dark red. The chickens are easy to rear and the flesh is of excellent quality. The hens are good layers and mothers. Cocks weigh 5 to 6 lb., and hens 4 to 5 lb. The plumage of the cock is very full and flowing.

Sussex Fowl, like the Dorking, are said to have been introduced into Britain by the Romans, 55 B.C. The Sussex poultry-rearers have been long famous for the production of the very best table-fowl. The hens are good layers and good mothers, and the chickens very easy to rear. For exhibition purposes there are three varieties of Sussex, viz., speckled, light, and red or brown. In all, the general type is uniform—broad, square breast, with long, deep breast-bone, wide shoulders, short thighs and white legs. The white or light Sussex is marked like a light Brahma. The minimum weight given in the standard issued by the Sussex Club is 9 lb. for cocks and 7 lb. for hens, and most points are allowed for size, feet and legs coming next. Though a pure-bred fowl, the Sussex has long been bred for utility purposes only, and it was not until 1903 that this breed was much known outside the county from which it derives its name. The speckled variety is said to be the original type; the plumage is rich reddish brown, speckled with white.

Wyandotte Fowl. An American breed originated in the late seventies or early eighties, and admitted as a standard breed in 1883. The silver-laced variety was the first to appear, followed by golds, whites, buff, buff-laced, blue-laced, partridge, silver-pencilled, and Columbian. At the present time whites are most popular, followed by partridge and golden; silver-pencilled and Columbian are also increasing in popularity. The Wyandotte takes its origin from Sebright, Brahma, Hamburg, and Cochin crosses and is an excellent utility fowl, easy to rear, a good layer of tinted eggs, a steady hatcher and a small-boned bird in proportion to its size; the flesh is of good quality, but its yellow legs are rather against its appearance as a table-fowl in the English market. The white variety, being a self-colour, is easier to breed to exhibition standard than the laced partridge or pencilled Wyandottes, which all require a system of double mating in order to produce the best specimens. Apart from the varied colour and plumage of the different varieties, the Wyandotte type is as follows: the body is full and broad in breast, rather cobby; legs, bright yellow and free from feathers; comb, rose, neat and full of work; the back spike should curve downwards, following the contour of the head. The comb, face, and wattles are bright red, the back is broad and short. In colour the silver has a white ground evenly and distinctly laced all over with black, and black tail in the hen; the cock has silver top colour, hackle and saddle striped with black, white breast with black lacing. For the golden variety, substitute "golden bay" for white in

ground colour, fluff dark slate or black powdered with white or gold respectively. The buff-laced is rich buff, each feather laced with white. Blue-laced, ground colour, rich bay laced with blue, allowing for difference in the sexes. Partridge cock, orange or golden-red on hackle and saddle, each feather striped with black, back and shoulders bright chestnut-red, breast and tail black. Hen, brown ground colour pencilled with black. Silver-pencilled, the same markings, substituting white for orange and



AYLESBURY DRAKE

black for chestnut in the cock and steel-grey for brown in the hens. Columbians have the Light Brahma colour and markings.

Yokohama or Phoenix Fowls, sometimes called "Japanese Longtails."

A very beautiful variety, having a most graceful carriage and very long tails. In Japan, tails have been seen measuring up to twenty-three feet, but such specimens are kept on high perches and only allowed down three times daily for exercise. Tails over six feet are rare. The colour resembles the Duckwing Game. Notwithstanding their beauty, Yokohamas are very hardy and good layers, and the flesh is dainty.

WATERFOWL (DUCKS)

Aylesbury Ducks, as the name denotes, came from the Vale of Aylesbury, in Buckinghamshire. It is the most popular breed for market purposes, and is hardy, grows quickly and attains great size. The ducks



RENDWALD-AYLESBURY DUCKS

are good layers of white eggs. In shape the Aylesbury is long, deep, and broad, the keel forming a straight under-line from breast to pouch. The colour of the plumage is pure glossy white, legs and feet orange, and bill pinky white. It must be remembered that on some soils the bills will change colour, becoming of a stained yellow on ferruginous soil and orange on peaty soil. Ducks weigh about 9 lb., and drakes 10 lb.

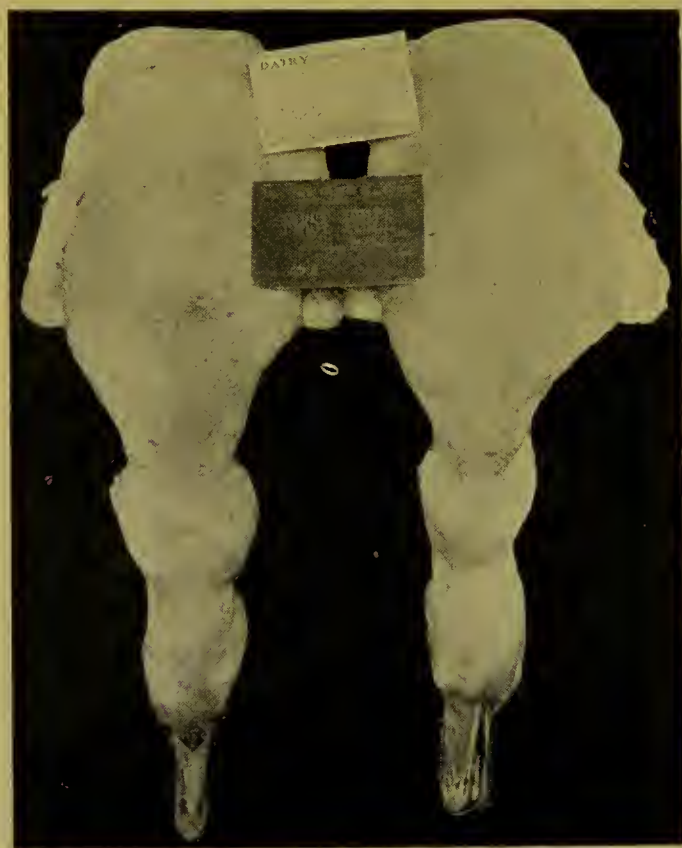
Cayuga Ducks. A large black breed somewhat resembling the Ayles-



AYLESBURY DUCK

bury in shape. It derives its name from Lake Cayuga in North America, from where it was originally imported. It is probable an Aylesbury cross was used in the development of the present-day Cayuga. The colour is a brilliant beetle-green, or black with green sheen. Cayugas are fairly good layers, but the eggs are often very dark in shell colour, even almost black. The ducklings are hardy and mature quickly, and as a table-duck no breed can equal it in deliciousness of flavour or quality of meat. Cayugas are particularly easy to fatten. Drakes weigh about 8 lb. and ducks 7 lb.

Indian Runner Ducks originated in the Far East, and are said to have

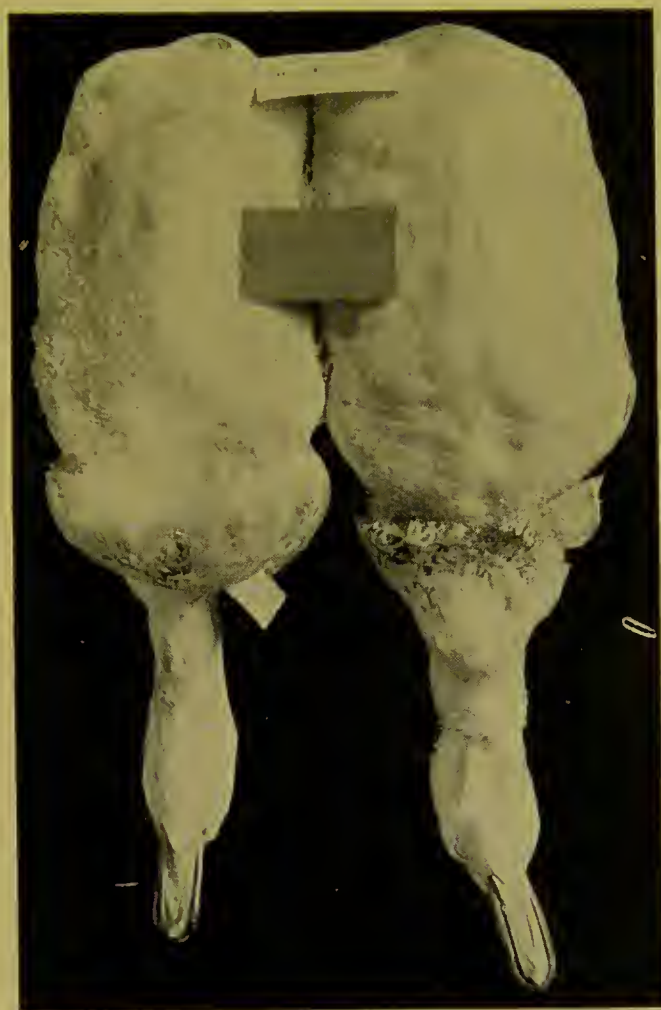


COUPLE OF DUCKS

been first imported by a sea captain, who gave a drake and three ducks to some friends in West Cumberland. Some authorities are of opinion that they came from the East Indies or Borneo. The notable feature of Indian Runners is their great laying powers; the ducks are non-sitters, and they commence to lay earlier and continue to do so longer than any other variety; they are hardy and good foragers and travel far in search of food at a very smart pace. They are small, racy-looking birds, with very upright carriage. The colour is fawn and white; the head is fawn on the cap and cheeks, neck white nearly to the base where the fawn colour of the body begins; this fawn colour ends abruptly underneath, half-way between the breast and legs; the wing-flights and the rest of the under colour are white except

for an indistinct greyish line from the tail to the thighs ; the back and tail are fawn colour, the wing-flights forming a white saddle across the back.

Muscovy Ducks are an American breed probably introduced into England about 1570 by a branch of Turkey merchants called the "Muscovite Company." They are remarkable for their size, having in some cases scaled up to 14 lb. for drakes, and for the curious red caruncles



COUPLE OF PEKIN-AYLESBURY DUCKS

which surround the base of the drake's bill. The face of the drake is naked and covered with scarlet skin round the eyes. The most common colour is pied black and white, but there are also pure white, black and blue, dun and white varieties. They are fair layers and the flesh is very palatable, but owing to its pugnacity the breed is not much kept.

Pekin Ducks, though originating in China, were first taken up by an American about 1872, although Mr. Fowler, of Aylesbury, received an importation about the same date. The Pekin is an excellent all-round breed, hardy and good layers, but they do not attain the weights of the

Aylesbury and are softer and looser in plumage, which is of a deep creamy white, and the legs are set well back, giving a very upright carriage; the tail is rather turned up and the neck thick; the legs and beak are bright orange. Drakes weigh about 9 lb. and ducks 8 lb.

Rouen Ducks are supposed by some authorities to have originated in Rouen, in France, while others maintain Rouen is a corruption of the word "roan," since the colour appears in the plumage. However, there seems to be no doubt that the Rouen, as known in this country, is a direct descendant of the wild duck, or Mallard, which it much resembles in colour. Rouens are very hardy, easy to rear and good layers; the flesh is excellent, and drakes weigh up to 11 lb. The drake's plumage is very beautiful, the head and neck being lustrous green with a white ring or collar dividing the green neck from the claret colour of the breast, but not quite encircling the neck; the under colour from the claret of the breast to the tail is clear bluish French grey, finely pencilled and ending in black just at the tail. The back and tail are rich green-black, and wings grey, having a broad purple-blue wing-bar edged with a narrow band of black on each side, and again a bar of white. Legs, bright brick-red; bill, bright greenish yellow, with a black beak (*i.e.*, tip). In the duck the colour is rich chestnut-brown, each feather clearly pencilled with black except the wing-flights and bars, the duck also having the purple-blue wing-bar. The duck's beak is bright orange, and legs orange-brown.

There are several other varieties of ducks, which have been comparatively recently "manufactured" for utility purposes, such as the Khaki Campbell, Coaley, Fawns, Orpingtons, &c., besides East Indians and the many other beautiful breeds of ornamental water-fowl.

GEESE

Geese are probably one of the oldest varieties of domestic poultry, having been found already domesticated in Britain at the time of the Roman Invasion. Unlike other breeds of poultry, geese are very long-lived; in fact, "A goose with man will spin out four-score years." Geese are inexpensive to rear, as they feed mainly on grass and vegetables. The principal breeds in this country are Chinese, Embden, and Toulouse. Chinese geese are also known as "Swan Geese," "Chinese Swan," "Knob Geese," and in Ireland are sometimes called "Poland Geese." There is also a breed much valued in America called the "African Goose," which is the result of a cross between the Chinese and Toulouse. The Chinese goose is upright in carriage and long on the legs, and the body is not so large and heavy as that of the Embden or Toulouse. A marked characteristic of the Chinese Goose is the large knob or tubercle at the base of the bill, which is black in the grey or brown variety and yellow in the white. In the former, the ground colour of the plumage is grey with a dark brown stripe down the neck and shoulders and a clear reddish fawn-coloured breast. This breed is not so popular in England as the other two varieties above mentioned, but

excels the larger breeds in egg-production and fertility, and is useful for crossing, as a gander of the Chinese breed will mate with more geese than can be allowed for an Embden or Toulouse, for which three or four females is the usual limit.

Embden Geese. A large pure white variety, sometimes weighing up to 35 lb. The Embden is a tight-feathered bird, and the neck should be long and swan-like and free from any "gullet" or



A FLOCK OF GEESSE

"dewlap." The body is broad and thick and almost devoid of keel, and the carriage sprightly and upright. Embdens are good sitters and mothers, and a goose will sit as soon as she has completed her nest of eggs.

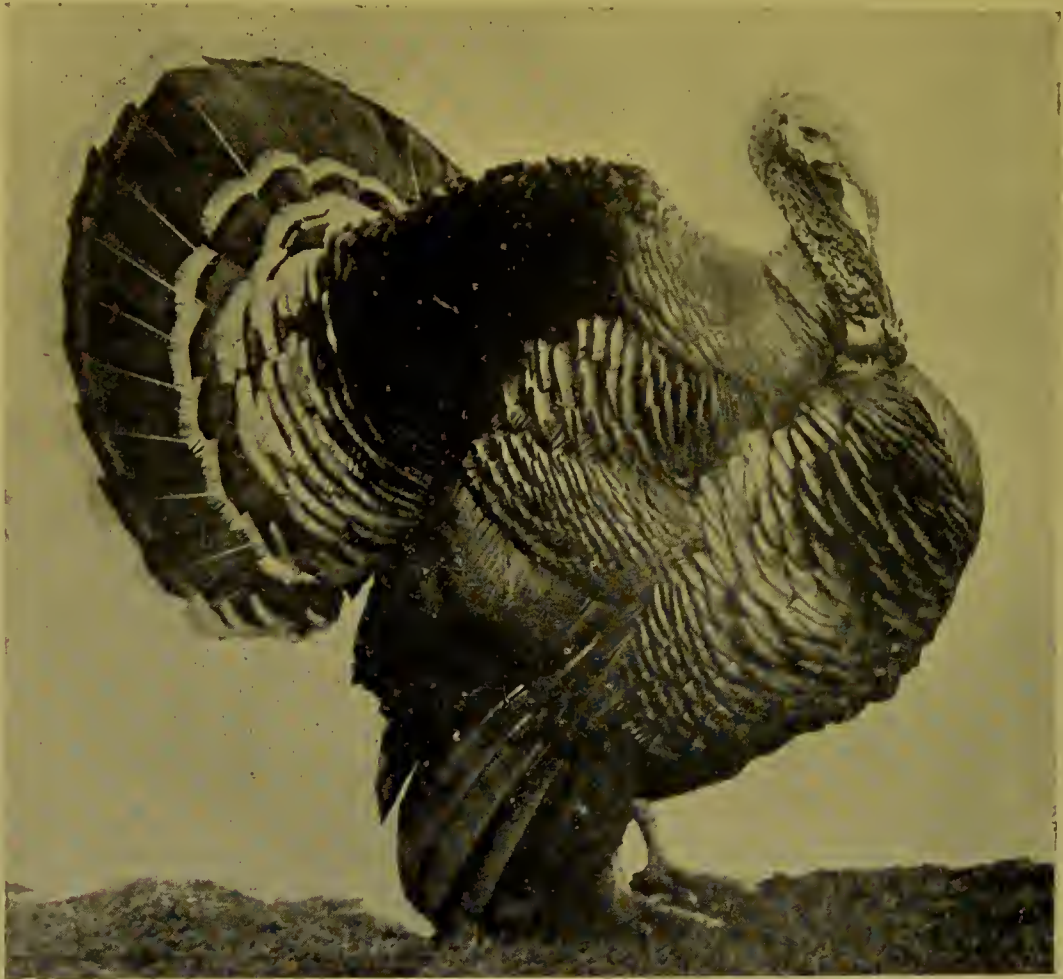
Toulouse Geese have prominent deep breasts and keel, and resemble an Aylesbury duck in carriage; the stern is almost square and the legs short and stout. The neck is thick and the throat well gulleled. Toulouse are loose in feather and appear very large. The colour is a sound steel-grey, and the stern, from the legs to the tail, is white. A Toulouse goose will lay far more eggs than she can hatch, so that it is necessary to use hens for incubating the first part of the batch.

Sebastopol Geese are white, with curiously curled and long feathers resembling cut paper. This breed is kept more as a fancy or ornamental water-fowl than for ordinary purposes.

TURKEYS

It is not known exactly when turkeys were introduced into England, but mention is made of these birds in the reign of Henry VIII. as having been brought from America. The different domestic breeds of turkeys are: American Mammoth Bronze, Cambridge Bronze, Norfolk Black, White Austrian, and White Holland and Italian, also Lavender and Buff

turkeys. Turkeys commence to lay about the beginning of March, and after laying fifteen or twenty eggs will evince a desire to sit. If the turkey makes her own nest and the eggs are allowed to remain, she will sit sooner than if the eggs are removed as laid. The turkey is a very careful mother, and seldom breaks an egg or tramples on a chick. A remarkable characteristic of the turkey is that one mating with the male bird will fertilise the hen's eggs for the whole season. The general



TURKEY COCK

characteristics in all breeds and both sexes are much the same. The head is of a rich red and sometimes partially blue colour, and is free from feathers and carunculated; the beak is strong and curved, and eyes large and dark; the wattles are long and pendant. The body is long and deep, and breast broad and full; the wings are very powerful and the tail long. The turkey cock struts and fans his tail like a peacock, and his caruncles are larger and brighter than those of the hen.

American Mammoth Bronze. This breed is the largest and most handsome and popular, and is descended from the North American wild breed. The colour is a rich, metallic, lustrous bronze; the plumage of the hen is very similar to that of the cock, but less brilliant. Adult cocks weigh up to 34 lb. and hens 15 to 20 lb.



PAIR OF TURKEYS

Austrian and Holland Turkeys. Two white varieties, of which the latter is much the larger and more useful. The flesh of white turkeys is said to be very delicate and finer in quality than that of the bronze.

Cambridge. This variety has been so extensively crossed with the American Bronze that it is doubtful if any pure strains now exist.



TURKEYS: THE PICK OF THE FARM

Italian Turkeys are largely bred in France, where they are known as the "Dindons d'Italie." It is small compared with the other breeds, and of a greyish black colour and very much given to incubation. It is even said to be a common practice to use the cock as a mother. He is given a stiff dose of brandy and water overnight and then placed on perhaps thirty-five eggs, and usually sits well and steadily.

Norfolk or Black Turkeys are rather smaller than the Cambridge; the colour is lustrous black.

Turkey Poults or chickens require more care in rearing than the young of ordinary poultry until about eight weeks old, when they "shoot the red," viz., when the red caruncles begin to grow on the head and neck. Care must be taken to keep them dry, never allowing them out in long, wet grass until the end of the first eight weeks. Young turkeys require a liberal supply of green food, chopped and mixed with their other rations. (*See Feeding Poultry.*)

Profitable breeds of poultry are recommended according to the following classified characteristics ("Douglas's Encyclopædia"):

LAYING OR NON-SITTING BREEDS (PRODUCTION OF EGGS)

MINORCAS, LEGHORNS, ANDALUSIANS, HOUDANS

Characteristics. Light-bodied birds weighing from $5\frac{1}{2}$ to $7\frac{1}{2}$ lb. Active in habit, noted egg-producers, but generally poor table-birds. These breeds lay white-shelled eggs. They are known as "non-sitters," as the maternal instinct is not strongly developed, though broody specimens are not uncommon.

Selection. White Leghorns and Black Minorcas are most recommended. All the above-mentioned breeds thrive upon light or gravelly soils. For a cold, exposed situation or a clay soil, Leghorns should be selected. Minorcas, Andalusians, and Houdans are best suited to medium or light soils and sheltered situations.

GENERAL PURPOSE BREEDS (WINTER LAYERS)

PLYMOUTH ROCKS, ORPINGTONS, WYANDOTTES

Characteristics. Large-bodied birds, weighing from 7 to 11 lb. These breeds are hardy and combine both laying and table qualities. They are good winter layers, and all lay brown-shelled eggs; the hens make good sitters and mothers.

Selection. All three breeds are most excellent. The Wyandottes and Plymouth Rocks are hardier than the Orpingtons. For cold, exposed situations and clay soils Plymouth Rocks should be selected.

TABLE BREEDS (PRODUCTION OF FLESH)

DORKINGS, INDIAN GAME, OLD ENGLISH GAME, FAVEROLLES

Characteristics. Large-bodied birds, weighing from 7 to 11 lb. and possessing great development of flesh. All, with the exception of Faverolles, poor layers. Dorkings lay white eggs, Game and Faverolles tinted eggs.

Selection. Dorkings, Faverolles, and Indian Game are most recommended. A bird of prime table quality should possess a large frame, together with fineness of bone, scarcity of offal, a large deep breast, white flesh and skin, and white legs and feet. The Indian Game, although not possessing all these qualities, is one of the best breeds for table purposes when crossed with white-fleshed breeds, such as Dorkings or Faverolles. The above-mentioned breeds, especially Dorkings, thrive best upon medium or light soils. Birds of high-class table quality are difficult to produce on heavy clay soils.

Crossing. Under special circumstances crossing is beneficial. If the birds are suitably mated, crossing tends to increase the size, vigour, and hardiness of the offspring; this applies only to a first cross, that is, a cross between two pure breeds. The object in view should first be studied, and two breeds selected whose characteristics and qualities, when blended together, will secure the desired result. Indiscriminate crossing is positively injurious.

To maintain a first cross and to avoid the necessity of breeding or purchasing new stock of both breeds every year, the following plan will be found both practical and economical. If, for example, it is desired to cross Houdans and Leghorns, and that the first mating be a cock of the former breed and hens of the latter, the progeny will be half-bred. With these half-bred pullets a Leghorn cock is mated the following year; the progeny will then be three-quarters Leghorn and one-quarter Houdan. Again, the third-year pullets of this mating are run with a Houdan cock, and the chickens thus produced will be half-bred. This method is continued year after year, simply using alternately a male bird of the two breeds originally employed. While the cross-bred pullets produced each year are kept as stock for the coming season, the cockerels are disposed of for killing. Under no circumstances must cross-bred male birds be used for stock purposes. In this simple manner the cross is confined to two breeds, and no expense, except the yearly purchase of a male bird, is incurred after the initial outlay.

The following crosses are recommended:

For Egg-production

COCKS	HENS
Houdan.	White Leghorn.
Houdan.	Black Minorca.

For General Utility Purposes

COCKS	HENS
White Leghorn.	Plymouth Rock.
White Leghorn.	Buff Orpington.
Black Minorca.	Plymouth Rock.

All these crosses produce pullets which are very vigorous and extremely prolific, and cockerels that can readily be disposed of for table purposes.

For Table Purposes

COCKS	HENS
Indian Game.	Dorking.
Indian Game.	Faverolle.
Indian Game.	Buff Orpington.
Old English Game.	Dorking.

Importance of Pure Breeds. In order to secure the greatest possible return from common fowls of the country, it is necessary to raise them to the highest standard of perfection. This standard can only be attained by breeding from pure-bred male birds, as they possess known good qualities and have the power of stamping such upon their progeny. Mongrel male birds lack these characteristics, and are therefore unsuitable for breeding purposes. By the use of mongrel or cross-bred male birds it is quite impossible to grade up or improve common fowls.

At the same time, it would not always be advisable to dispose of all mongrel hens, because good results can be obtained from flocks of cross-bred hens if they are mated with pure-bred male birds of a type possessing the qualities desired in the offspring.

Ducks. The following are the leading breeds of ducks :

For Egg-production. The Indian Runner : a small-bodied bird of very active habits ; an excellent forager ; a small eater and a great layer.

The Pekin : a large-bodied bird, possessing great vigour and specially valuable for crossing purposes ; an excellent layer.

For Table Purposes. The Aylesbury : a large-bodied bird, possessing flesh of excellent quality ; a very rapid grower.

The Rouen : a large, heavy-bodied bird, possessing flesh of good quality. This duck attains great size, but does not mature so rapidly as the Aylesbury.

Geese. The two leading breeds of geese are :

The Embden : a large-bodied bird, with flesh of excellent quality ; comes early to maturity ; a good sitter and mother.

The Toulouse : a very massive bird ; slow to mature, but attains

great size and weight, and possesses flesh of good quality ; a good layer and, as a rule, a non-sitter.

Turkeys. The American Bronze is the chief variety. The birds are hardy and very massive ; they grow quickly and attain great size and weight ; the flesh is of excellent quality.

Dry soil is essential for turkey-rearing. The careful selection of stock birds is most important. For breeding purposes, preference should be given to large-framed, fully developed birds. The rearing and fattening of turkeys is dealt with under a separate heading (*see* Turkeys).

CHAPTER II

POULTRY (CONTINUED)

GENERAL HINTS ON SELECTION AND BREEDING

(1) BREED with a definite object in view.

(2) Avoid indiscriminate breeding. Breeding without selection leads to failure; therefore, only breed from selected birds possessing the required qualities and not from the entire flock. If possible, establish a select breeding-pen and ascertain that the birds chosen are from a good strain, perfectly healthy, and possess straight breast-bones. A deformed or crooked-breasted fowl should never be used for breeding purposes.

(3) Avoid in-breeding; it causes deterioration in productiveness and produces birds weak in constitution, which renders them more liable to deformity and disease. The introduction of new blood is important, and is best obtained by purchasing each year a fresh male bird of a good strain and unrelated to the hens with which he is to be mated.

(4) Six to ten hens may be mated with each male bird, but no fixed rule can be laid down, as the season of the year, the breed, and the vigour of the cock are all determining factors.

(5) Do not keep old hens. A hen for laying should not be kept after two and a half years of age. Each year all such hens should be sold off before they moult. Usually the best prices can be obtained in June and July, but a study of the local markets will be the best guide in this direction. Early hatched pullets should take the place of the old hens, and this necessitates the sale of half the stock annually. Such pullets should be marked by placing rings or bands upon their legs. All hatched one year can be marked upon the right leg, and those hatched the following year upon the left. By this simple means the birds to be disposed of can be easily distinguished.

(6) Hatch early to procure strong and healthy stock birds, and rear young birds apart from the general stock. At an early age separate the sexes. When not allowed to run together, both cockerels and pullets grow faster and ultimately make better birds.

The Sussex Chicken Industry. The following account of the Sussex chicken industry is of considerable interest to those engaged in the poultry-fattening industry:

The industry in Sussex has developed to such an extent that the number of chickens reared locally does not meet the demand of those

engaged in the business. To supply this want large numbers of chickens are imported from Ireland and Wales. The chickens imported from Ireland are reared chiefly in the counties of Carlow, Kilkenny, Wexford, and Waterford.

The general opinion of the fatteners is that the Irish chickens are inferior in quality and less profitable to fatten than those reared in Sussex. This inferiority appears to be due to the system of rearing adopted in Ireland, and to the age at which the chickens are sold. Irish chickens, when fattened, are often much larger than the Sussex chickens, but do not, in the early part of the season, realise such high prices in the London market. This is because the birds are more matured and the flesh consequently less tender and not so good in quality. To remedy this the birds should be kept growing from the time they are hatched, and they should, like the Sussex chickens, be large enough to put up for fattening when from ten to twelve weeks old. At the present time many of the chickens received from Irish dealers are not less than four or five months old. In Sussex, the chickens are fed chiefly upon finely ground oats from the time they are hatched until they are killed for the market, whereas in Ireland it is probable that Indian meal forms the largest portion of the diet. The practice of using ground oats seems to possess several advantages—the grain is often grown locally, and is cheaper than Indian meal; there is no great change in the diet when the birds are put up in the coops for the final process of fattening; the first quality of flesh is produced especially when the food is prepared with separated milk, as is done in Sussex.

The Fattening Process. Fatteners complain that Irish chickens cannot be purchased in uniform lots. Many of the birds are certainly of first-rate quality, and the chief fault is that they do not reach the fatteners when quite a month younger.

Sussex fowl, while not possessing any very marked characteristic as to size, colour or shape, are admirably suited for the fattening process. Most of them conform to one general type, of which there seem to be three more or less distinct varieties, viz., the Light Sussex, with markings very similar to Light Brahmas; the Red Sussex, which are very dark red; and the Speckled Sussex, with light markings on a dark body. In type all these varieties are deep, broad, and long, fairly low set, with a large amount of bone and with white legs and flesh. The legs are free from feathers. The frame is large, and although the bone is strong it is not coarse, and when the birds are killed and shaped they are very plump in appearance. The chickens are strong and healthy. Indeed they could not undergo the strain of fattening in coops for three or four weeks if they were not so.

Developing the Sussex Breed. For many years no effort has been made to keep the varieties distinct, and they were crossed indiscriminately without, perhaps, much loss to the general type. A Sussex poultry club has, however, been formed with the object of developing the breed. Rules have been drawn up, and some of the leading societies have formed

classes for the breed at their shows to be held during the year. As a result, the three varieties will no doubt become more distinct in the future.

The hens are good foragers and hardy, and it is claimed that they are very consistent layers. They must be good winter layers, or the present numbers of spring chickens could not be produced.

Few of the newer breeds of poultry appear to have been introduced for crossing with the native Sussex fowl, probably because none of them is superior for cramming. Buff Orpingtons have been more used for crossing than any other breed. They appear to have done well when new blood has been systematically introduced, but when in-breeding has been carried on they have quickly deteriorated the general stock, the chickens being too delicate to endure the strain of fattening. Faverolles are rarely seen, though they more nearly resemble Sussex fowl in type than do Buff Orpingtons.

Methods of the Fatteners. The largest and most successful poultry-fatteners in Sussex have rarely any other occupation, nor do they subordinate the industry to farming or any other business. Some fatteners may raise the greater part of the chickens which they fatten; but it is customary for those doing a large trade to buy extensively. The chickens are collected, usually thrice weekly, either by the fatterer himself or by a "higgler" who works for him. Most fatteners have their regular suppliers, and can rely upon a constant supply of suitable birds. The present season (1910) has not been a good one, and the supply of chickens in March and April was very short. This was due to the unfavourable season for very early chickens, and the smaller number of eggs available for setting in the early months of the year. Irish chickens are being imported to make good the deficiency; but although they can be purchased slightly cheaper than the Sussex chicken, they are not so profitable to fatten. The April price for good Sussex chickens ready to put up to fatten was from 3s. to 3s. 6d. each, while the price of Irish chickens delivered in Sussex varied from 2s. 6d. to 3s. each, according to the quality and the source of supply. Large fatteners buy direct from Irish dealers and small fatteners purchase from agents.

Factors in Success. One important factor in the success of the industry is the large number of chickens reared locally, and this again depends upon the large number of people who keep fowls and rear chickens for selling to the fatteners. Almost the entire rural population of certain districts in Sussex is engaged in either rearing chickens or fattening them, or in both. This is important for several reasons—it causes the work to be taken seriously, and it is, therefore, done more thoroughly, and in a more business-like manner than would otherwise be the case; it ensures a more regular supply of suitable chickens for the fatterer than if the work was in the hands of fewer people, since when one rearer fails another will succeed. Another important factor is that the rearers have come to know the class of chickens required for fattening, and they realise that any other is useless. If they rear chickens such as Leghorns or Minorcas,

they are not offended when a fatterer refuses to buy them. This, of course, is the outcome of many years' work, but it clearly shows how firmly the industry is established, and how important it is that all should work together. This ultimately benefits all, because the fatterers are enabled to produce a special article and to get special prices ; they can, therefore, afford to pay substantial prices to the rearers, and thus all participate in the profits.

How the Chickens are reared. The chickens are mostly hatched by hens, and they are reared on grass in coops placed in sheltered spots about the orchards and fields. They are carefully managed, but no special system is adopted. Finely ground oats is the chief item of food, and pollard and bran may be added in small quantities. The meals may be



FATTENING-PENS AT LURGAN

mixed with separated milk or water, but milk is preferred. Some rearers give no grain to the chickens, while others give one feed at night for a few weeks before selling. The chickens should be large enough to put up for fattening when from ten to twelve weeks old ; but this is only possible under favourable conditions and in the spring months. The chickens are fed liberally and kept growing from the start, and they are always reared with the object of being fattened, and are fed accordingly. In this respect the Irish practice is inferior to that adopted in Sussex. The county of Sussex possesses no special advantages, except that it is more sheltered than some districts in Ireland, and the climate is distinctly drier.

For the purpose of fattening, the birds are placed in coops. These are made with three divisions, each holding five or six birds. The coops are seven feet long and eighteen inches wide. They are made of laths fixed one and a half inches apart. The laths are placed upright in front of the coop and lengthwise in the bottom and top. The back of the coop is boarded, and when coops are required for outside use the top is boarded also. The coops are simply set upon strips of wood nailed to posts, the bottom of the coop being about three feet from the ground. The whole arrangement is the simplest and cheapest possible.

The Food of the Chickens. Chickens are kept in the coops from three to four weeks and for the first ten or fourteen days they are not crammed,

but are fed from troughs hung on the outside of the coop a few inches from the bottom. At first the allowance of food is limited, but afterwards the chickens are fed liberally twice daily. No grit or green food is given. The food is composed of oats ground as finely as possible, and mixed with skim milk to a thick creamy or semi-liquid consistency. As a rule some fat is added to the food, but at first it is only given in very limited quantities. The fat, which is generally that made from the wastage at bone works, or prepared from mutton refuse, is usually purchased in casks. To prepare the fat for use it is placed in hot water, and, while liquid, pollard is added and the whole thoroughly mixed. The mixture is then well stirred into the semi-liquid mass of ground oats and skim milk.

All successful fatteners insist upon the necessity of using fat in some form or other. Some melt out fat from butchers' refuse procured locally. Mutton or other good fat costs from 2s. to 3s. per stone. Skim milk, which is regarded as essential, costs a considerable sum, and is considered to give profitable returns. It is usual for fatteners to keep a few cows, according to the number of chickens they fatten, to provide skim milk for feeding. Some prefer to use soured skim milk, while others are in favour of using it in a fresh state. The milk, in conjunction with the ground oats, produces flesh white in colour and of particularly fine quality.

Hints on Trussing. The following notes on trussing, taken from the *Irish Farming World*, give the process in a very concise way :

Presuming the fowl has been carefully plucked and otherwise prepared, the operator lays the bird on its back, cutting away the extreme tip of the wing, and also the thumb, at the same time removing the loose skin on the under side of the wing.

Turning the bird on its side, the sinews are now removed by making a cut on the outer side of the leg, from the hock to the foot, inserting any strong instrument, such as the knife steel, under the tendons now exposed, and drawing them by this means towards the body of the operator, the head of the fowl being turned away, when they will give at the thigh, and may be removed at the foot with the knife. Now lay the bird on its chest, with the stern towards the dresser and head away from the body, and cut across the skin at the back of the neck, about $2\frac{1}{2}$ inches from the body, and lay the skin thus loosened backwards, and proceed to cut off the neck where it joins the body, making a loose flap out of the skin of the neck, and the crop may now easily be extracted.

The finger should now be passed round the interior of the fowl and all intestinal structures thoroughly loosened. Next place the fowl tail upwards, and make a transverse incision, somewhat deeply across between the tail and vent. This cut enables the operator to place a finger around the bowel (or "trail"), and drawing out a loop of which, it is cut off with the vent, leaving an opening large enough through which to insert the fingers and seize the gizzard, drawing out all the interior of the fowl, including the intestines, liver, heart, and lungs *en masse*. Should the bird be one of extreme fatness, by a little rolling of the body under the



REMOVING THE NECK FROM BODY



DRAWING THE SINEWS

TRUSSING



FIRST PART OF TRUSSING BIRD FOR ROASTING



BIRD TRUSSSED WITH STRING READY FOR ROASTING



BIRD TRUSSED WITH STRING READY FOR ROASTING



TRUSSING FOR ROASTING, WITH STRING

hand, the gizzard will be sufficiently loosened from the mass of abdominal fat to allow of more easy drawing of the inwards.

A great improvement can be made by the removal of the merry-thought, which can be simply done by passing the knife between it and the flesh, and cutting it away at the extremities. The bird is now ready for trussing, unless it is desired to remove the feet or trim them, which is done by cutting off the greater part of the toes.

The Operation for Cooking. To complete the operation for cooking, the trussing needle now comes into requisition. The fowl is placed on the table, breast upwards, and the threaded needle inserted through the leg, close up to the thigh joint, then through the body to the leg on the other side and pulled out; the bird is then turned over, and the needle and string passed through the first joint and pinion of the wing, taking the string over the back, and repeating the operation on the other side, when the string comes close to where it was first drawn into the fowl, and the two ends are securely tied. It might here be added that when passing the string from one wing to the other, the flap of skin made from the skin of the neck should be caught up to hold it in position. Then, to secure the ends of the legs in position, the needle and string are passed through the body under the breast-bone, and over the other leg, when the two ends are tied tightly; and when the fowl is smoothed over with the hand it is complete.

Should it be desired to boil the fowl, the preparation is somewhat different. The preliminary drawing of sinews, &c., having been carried out, the fingers are passed from behind, under the skin, which is loosened on the thigh down to the hock on both legs, taking care not to tear it. Make a cut on the inside of each leg, about one inch from the hock. Taking the fowl in the hand, the fleshy part of the leg may now easily be pushed up under the skin, then holding the foot, the hock is pushed through the cut made in the skin, which is drawn over it, and it disappears from sight. The shank is then cut across where it protrudes, and the feet in this way are removed.

In tying up, insert the needle through the front of the body, stitch the wings as in a roaster, and tie up as before. Then to secure the ends of the legs, the string should be passed through the body above the hock (which must be felt for), and under the breast-bone to the hock on the opposite side; then bring it round over the back, and securely tie it. This completes the operation.

BREEDS OF POULTRY FOR TABLE

The pure breeds of fowl which, in England, come under the heading of "Breeds most suitable for table" are as follow: Sussex Dorkings, Old English Game, Faverolles, Buff and White Orpingtons, Indian Game, Langshans, Plymouth Rocks, Wyandottes, and Black Orpingtons. Of these the first six have white flesh, combined with white legs. Indian Game carry a great quantity of breast meat of excellent quality, but the

legs are yellow and the skin has a yellow tinge. In the English market yellow-skinned birds do not command top prices, and there is a prejudice against legs other than white, therefore the Indian Game is usually employed for crossing with Dorkings, Faverolles, and Orpingtons to improve size and meat-carrying capacity and also to give stamina. No other breed possesses the same length of breast and whiteness of flesh as the Dorking; yet owing to the fact that pure-bred Dorking chickens are difficult to rear under ordinary circumstances it is generally found advantageous to use an Indian Game cock with Dorking hens, the progeny from this cross being acknowledged as one of the best kinds of table fowl. The Old English Game-Dorking cross is also often used and produces a fowl of high quality and flavour, but the fighting propensities of Old English Game necessitate extra precautions for keeping the cocks within bounds.

Dorkings do not thrive in all localities and are best suited to light dry situations, therefore in many places it will be found preferable to use Buff or White Orpington or Faverolles hens with

an Indian Game cock. Pure-bred Orpingtons, though good, are not equal to the produce of the Indian Game cross. Faverolles can be used either pure or crossed; some breeders prefer them pure whilst others consider crossing them with Indian Game a decided advantage, probably because environments vary, so that no hard-and-fast rules can be laid down; one particular breed will succeed in one place and with one breeder, which in different circumstances would be a failure. As a general rule, white-legged varieties do not stand damp situations as well as the yellow-legged breeds. Like the Faverolles, the various varieties of Sussex fowl are suited to most localities and are fast becoming very popular. The legs and flesh are white, the frame is large, the breast deep and long, the amount of bone is small in proportion to the size, and, when killed, the birds present a very good appearance.



COUPLE OF PULLETS CROSSED DORKING

The Sussex chickens are hardy and mature very quickly. Until recent years Sussex fowls were not much known outside their native place, and type was looked upon as the only important factor ; though there were various varieties of colour, the principal being Light or Ermine marked like the Brahma, Speckled and Red. Recently a Sussex club has been formed by those interested in the breed, and standards of points and colour have been drawn up for the various varieties ; shows have been



COUPLE OF PULLETS, CROSSED DORKING

induced to provide classes with the result that Sussex fowls can now be obtained true to colour, without much difficulty. In the English market there is a prejudice against dark-legged birds on the plea that their flesh is not so fine in quality as that of white-legged kinds ; however, it has been clearly proved that such breeds as the Croad Langshan and several of the dark-legged French varieties possess flesh as fine, as white, and quite equal to the Dorking in flavour and quality.

As already mentioned, the highest class of table breeds do not as a rule thrive to perfection on heavy clay soils, and here comes in the usefulness of the second-quality table fowls, Barred and Buff Plymouth Rocks, and White and Partridge Wyandottes ; for though Indian Game are fairly hardy, they cannot stand so much damp as the two previous mentioned. Therefore those who must keep fowl on heavy soil in damp climates should choose Rock or Wyandotte hens and cross them with Dorking, Buff Orpington, or Faverolles cocks. An excellent result will

also be obtained by using Rock cocks with Dorking or Faverolles hens ; though with these crosses the quality may not be equal to that of the Indian Game Dorking crosses, yet the greater hardiness of the birds will more than outbalance the loss in quality. In crossing to produce table birds, or, indeed, for any purpose, a pure-bred male bird must always be employed, though pullets of a first cross may in some cases be used again with advantage. The breeder should endeavour to aim for uni-



COUPLE OF COCKERELLS, CROSSED DORKING

formity of type, and the advantage of this uniformity will clearly be seen when the time arrives for killing and marketing the chickens. One simple method to adopt when crossing is to use each year, alternately, males of the two breeds first employed.

FATTENING POULTRY

When chickens destined for market reach the age of about four months it is necessary to put them through a ripening or fattening process, in order to bring them up to the required quality for which top prices can be obtained. This industry has been carried on in the south-eastern counties of England from time immemorial, in Sussex, Surrey, and West Kent, and though this "Sussex method" is now generally adopted by all who embark in the fattening business, yet "Sussex fowl" still ranks

first, for one reason because this gift of "fattening" in all its details is handed on from father to son, the successful fattener being, so to speak, born to the trade; and for another, because the fowls in these districts have been so long bred to a suitable table type. Large quantities of Irish fowl are imported from the counties of Carlow, Kilkenny, Wexford, and Waterford to supply the demand, and after being finished and fattened are placed on the market as Sussex fowl.

The usual period for fattening is three weeks, as if kept too long in the coops the birds deteriorate and lose weight. The fattening-coops



COUPLE OF UNFATTENED COCKERELS

are made of laths, and are about 7 feet long, 16 inches high, and 18 inches deep, and divided into three compartments, each holding four to six birds. In penning for fattening, birds of the same size and strength should be put together, and the sexes should be separated.

The laths which form the coops are nailed on, leaving spaces of $1\frac{1}{2}$ inch between except in the front, where 2-inch spaces are left and the laths are placed perpendicularly to allow the inmates to feed from the troughs. The laths go lengthwise along the top and bottom, the bottom laths being usually cut triangular with the apex pointing downwards, which facilitates the falling through of the manure.

The coops are fixed on legs or trestles, leaving a clear space underneath for cleaning, and it is necessary to observe the most scrupulous cleanliness, to have the cages thoroughly scraped and limewashed at frequent

intervals, and all troughs and food vessels scalded and kept sweet. Manure should never be allowed to accumulate under the coops, for birds will not thrive in a tainted atmosphere. In many cases special sheds are erected to accommodate the birds ; but, if available, barns and other out-houses can be utilised ; good ventilation is necessary, but draughts must be avoided. In summer, birds can be fattened in covered coops in the open, but these should be placed in a sheltered and shaded position, and away from the haunts of fowl at liberty. In winter, birds should be kept under cover and in not too cold a place ; for a low temperature will cause the birds to devote a greater proportion of the energy derived from the food into keeping up animal heat, hence more food would be consumed and profit would be less.

There are four methods of fattening, viz., trough feeding, pellet or hand feeding, cramming by funnel, and cramming by machine. Birds are in most cases trough fed for the first week or ten days and finished with the machine crammer. When first placed in the coops in order to promote an appetite the chickens are made to fast for twenty-four hours ; then food is supplied to them twice daily in V-shaped troughs ; when fully satisfied, the troughs are removed to prevent loss of appetite from over-satiation. In some cases this trough feeding is continued during the whole three weeks, and a considerable trade is done in trough-fed or unfinished fowls, which are in demand in certain localities and are far superior in plumpness, quality, and flavour to the ordinary unfattened chickens taken from the run.

This branch of the trade is well worth considering, because the amount of labour required in their production is comparatively small as against the fully fattened or finished article.

Hand cramming is done by forming the food into pellets, about 3 inches long by $1\frac{1}{2}$ or 2 inches thick. The operator catches the bird, and holding it firmly either between his knees or under his left arm dips a



CRAMMING AT LURGAN ON THE SUSSEX SYSTEM

pellet in milk and, opening the beak, inserts the food into the mouth, shoving it down the throat. About fifteen pellets will fill the crop. In some cases trough and hand feeding are combined, each bird after being allowed to satisfy itself from the trough being given a few pellets to fill up.

Funnel cramming is done by inserting the nozzle of a specially made funnel into the gullet of the bird and then pouring in the food, which is made of the consistency of cream. This method is quicker than hand cramming, but great care must be taken not to choke the birds.

When birds are crammed in large numbers a machine must be used and will prove to be a great saving of labour. The bird is taken from its pen and held under the left arm, the neck being stretched out straight; the operator opens its mouth and inserts the rubber nozzle of the crammer down the gullet into the crop, a distance of 4 or 5 inches. The machine has a reservoir which is charged with food in a semi-liquid state and when the tube is inserted into the crop the operator, who has his foot on the treadle of the machine, depresses his heel gently, forcing the contents of the machine into the crop until it is judged to be sufficiently full; this is done by keeping one hand on the crop. Care must be taken to relieve the pressure for a moment, before withdrawing the tube, otherwise, when the nozzle is being withdrawn, some food may pass into the wind-pipe and cause choking.

The food used is of great importance. In the south-eastern counties of England, ground oats is almost entirely used. What is known to the trade as "Sussex ground oats" is prepared by a special process, the stones for its grinding being dressed in a particular way. A small proportion of barley is mixed with the oats previous to grinding, and the whole corn, including the hulls, is ground into a fine flour. The analysis of this mixture, which is the nearest approach to a perfect food, is as follows: albuminoids, 15 per cent., fats or oils 5.5 per cent., carbohydrates 48 per cent. At one time it was difficult to obtain this Sussex oats except in the south-east of England, but now many millers in the United Kingdom have got these special stones and can turn out a very good article. Sour skim milk is used to mix the food and produces whiteness of flesh. Butter-milk is often used, and Sussex fatteners consider milk for this purpose gives a profitable return at 2*d.* per gallon.

Either sour skim milk or butter-milk will be found far better than sweet milk because the acid tones the digestive system. It may here be mentioned that food sour by reason of being mixed with sour milk must not be confounded with food turned sour, or stale from lying too long after mixing; this latter is the "sour food" against which we are constantly being warned by authorities on the rearing and feeding of poultry.

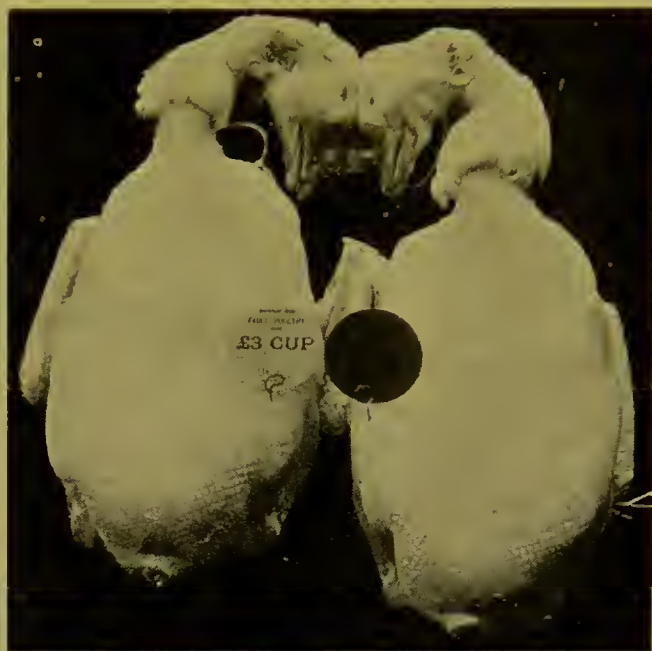
It is found that the use of fat improves the quality and gives juiciness to the flesh, therefore it is used by nearly all fatteners. To begin with only a small quantity is given, increasing the allowance towards the end of the period to as much as half an ounce per day for each bird. The required allowance for the number of birds to be fed is melted and

thoroughly incorporated with the food. Good mutton fat is generally used ; this fat can either be obtained clarified, in barrels, or can be prepared from butchers' scraps.

Other foods which can be used are as follow : For trough feeding when ground oats prove dearer than the requirements justify, equal parts of ground oats, fine barley meal and Indian meal can be used ; or two parts of ground oats and buckwheat meal to one part of barley meal, or equal parts of ground oats, middlings or pollard, and barley meal.

Indian meal is liable to produce yellow flesh and fat.

It has been argued that cramming is cruel, but if it were so, the birds would not thrive. Of course in careless hands injury could be done, but as injury to the birds would interfere with the profits, such a hand would soon be dismissed, therefore it pays to be careful. After the first few feeds the birds seem to welcome the appearance of the crammer at feeding time.



SMITHFIELD FAT STOCK SHOW. GEESSE.
EMBDEN GANDERS

Cost of Fattening. The cost of fattening varies according to the value of labour and differences in prices for milk and feeding-stuffs, but it may be estimated at from 6*d.* to 8*d.* per bird.

During the first week of confinement in the pens there may be only a very small gain in weight, or even a slight loss ; birds gain most in the second week, often as much as 1½ lb. ; but not so much in the third week, and if kept longer they begin to lose, therefore three weeks is the prescribed time for fattening, and the total gain 1½ to 2¾ lb.

FATTENING GEESSE

The goose industry, unlike that of turkeys and chickens, has declined in Great Britain of late years, probably owing to the fact that public taste has changed in favour of the more delicate flesh of the turkey, and fat roast goose is no longer the aristocratic dish which it was in olden times. Still, geese being grass-eating birds cost comparatively little to feed, and though they eat pasture very bare, instead of causing deterioration they improve land by digging out and eating the roots of ranunculus or buttercup which is often too common in pastures.

There is a good demand for "green geese," viz., young geese of good quality killed in summer, no extra fattening being given beyond two feeds daily of soft food such as barley meal and middlings, and one feed of grain. In Norfolk the dealers commence to buy up lean goslings at about five weeks old for this trade.



TABLE POULTRY. GOSLING (CROSS-BREED)

When stubbles are available geese can be run profitably on them before finally finishing them for market. Some rearers pen the goslings on turnip fields, which they eat as clean as sheep. For the winter markets geese are confined in sheds to fatten, and receive two feeds daily, one of soft food in the morning, and grain (oats is best) in the afternoon, given in the water troughs. Steeped whole oats is one of the best foods for fattening geese. Grit must always be given.

Geese can be killed by dislocating the neck, but this is rather difficult for a novice. It is, therefore, best to hang up the bird by the legs tied with a soft cord, stun it by a blow on the head, and then sever the jugular vein by making an incision behind the jaw, or by piercing through the roof of the mouth.

Goose feathers command the highest prices. The large white Embden, which develops quickly, is best for the early trade and is the breed kept most generally in Ireland under the department scheme. Toulouses are very large; the geese lay more eggs than Embdens but are not such good sitters. The Toulouse goslings take longer to develop and are not so plump as Embdens when half grown. The breeds are often crossed.

Chinese geese are a smaller breed and are often used for crossing with

the Toulouse and Embdens, because of their fertility, and are also said to be more delicate in flavour. Toulouse geese are very large when fattened, and are excellent for the Christmas trade when large heavy birds are required.

FATTENING TURKEYS

In Norfolk the method of fattening turkeys is to confine them in a shed for five weeks before marketing and feed with oatmeal, barley meal and Indian meal in equal proportions, mixed with milk, and fat is given in small quantities during the last fortnight. Three or four meals daily are given. Some fatteners feed but twice daily and keep the birds in partial darkness between-times. The floors of these sheds are well littered, and the birds are given perches, as, unlike chickens, turkeys would not thrive if confined in small pens. Another plan is to allow the birds free range, but to give extra food when they are required to put on flesh.

Two good meals daily of ground oats, mixed with milk, and a feed of whole oats in the evening would serve the purpose. This is often supplemented by hand cramming, each bird being caught and given several pellets made of meal and skim milk in the same way as described for the hand cramming of chickens. Boiled carrots and potatoes may be added to the meal; barley meal and wheaten meals can also be used, and it is always advisable to mix with milk as it whitens the flesh. The food is given in troughs, and any which is left should be removed after each feeding time. The evening feed may consist of barley, oats, or wheat, steamed or soaked in hot water. Grit and old mortar must always be supplied to aid digestion.

The best way of killing is to hang the bird by a soft cord attached to the legs, and with the left arm round the body to dislocate the neck with the right hand; however, this requires some skill and practice. Therefore a novice should, after hanging up the bird, give it a sharp blow on the back of the head with a stick to stun it before attempting dislocation. In plucking, the feathers are left on the top of the rump, on the neck and head, and on the back of the wings.

Birds should be always fasted before killing. It is most important to grade the birds evenly when packing, as one or two small specimens will spoil the price of an otherwise large-sized lot. Crooked-breasted birds will never fetch top prices.

FATTENING DUCKS

Ducks often succeed in localities and on soil which is unsuited for rearing turkeys and chickens, but a dry parched situation is not conducive to successful duck-rearing. The great centres of the duck industry in England are Buckinghamshire and Bedfordshire, the Vale of Aylesbury having been famous for its ducks from time immemorial. The stock birds are generally kept by the farmers, who sell the eggs to the "duckers,"

who hatch them under hens, and as ducklings require comparatively little brooding, several lots are put with one hen, and those hens which have hatched them are given a fresh lot of eggs. The ducklings are kept in batches of about fifty in dry sheds well littered with straw, and with yards attached. When very young their food consists of chopped, hard-boiled eggs and bread, and boiled rice and barley meal. The egg is left off in a few days and a mixture of boiled rice, toppings, barley meal, and tallow grease is given, to which chopped boiled nettles are often added. At first water is given in shallow vessels, and as the ducklings grow larger troughs are provided, a plentiful supply of grit being always within their reach. They are not allowed free access to swimming water, but are let out occasionally, and usually get a wash just before killing to clean the feathers, though this is not absolutely necessary and many ducklings reach the market which have never had a swim in their lives.

Rearing of Ducklings. Ducklings can be reared in greater numbers in a proportionately smaller space than any other species of poultry, without any bad results, and can bear forcing diet for a longer time than chickens. They are usually fit to kill at from seven to eight weeks and must be marketed at once when fit, that is, when the down has been changed for the first feathers; if allowed to go beyond this stage the feathers again change and once this process begins the birds go off in condition. The highest prices can be obtained from February to July.

Ducks intended for stock should never be reared on this forcing principle, but should have a wide range. Duck feathers are next in value to those of geese, and the down from the breast and back should not be mixed with the harder feathers.

The birds are killed by dislocation of the neck and plucked while warm; if killed at the right stage the feathers come off clean, but if too soon or too late, the birds will be full of pin-feathers or young feathers sprouting, and will look unsightly when plucked. Great care must, therefore, be taken to ascertain that the birds are ready for killing.

Aylesbury ducks, which derive their name from the famous Vale of Aylesbury, mature very quickly and take first place as a table duck. Rouens are the largest breed, but they mature slowly and the flesh is darker in colour.

Pekins are looser in feather and do not carry so much flesh as the pure Aylesbury but, being prolific layers and very hardy, they are often used to advantage for crossing.

Indian Runners in a pure state are too small to fetch top prices but, owing to their great laying powers, these ducks mated to a small-sized Aylesbury drake will enable their owner to get a very early supply of ducklings. A rather undersized Aylesbury drake should be used with these small ducks to ensure the fertility of the eggs.

The Cayuga duck is of a black or beetle-green colour and differs from other breeds inasmuch that the ducklings can be killed fleshy and plump off a free range; the flesh, though dark in colour, is very rich in flavour, resembling the wild duck. Cayugas are very hardy and grow quickly.

The eggs are very dark ; in some cases the shells are almost black, but the flavour is excellent.

KILLING POULTRY

All birds should be fasted for eighteen or twenty-four hours before being killed, as if food is allowed to remain in the crop and intestines it will turn sour and taint the flesh. The best and most humane method of killing a fowl is by dislocation of the neck. Take the bird by the legs in the left hand, then grip the bird's head between the thumb and first



PLUCKING CHICKENS AT LURGAN

finger or between the first and second fingers of the right hand, the palm of the hand being towards the comb, and the back of the fowl upwards. The legs should be held against the left hip and the head laid against the right thigh of the operator. The fowl should be then gently and firmly extended to its full length, and when the neck is taut the head is suddenly jerked forward, at the same time bending it suddenly backward, so that the neck will be dislocated at its junction with the head. It is best to get a lesson in killing from an expert, or to practise on a dead fowl.

When properly done, death is almost instantaneous, and although there is fluttering and muscular action all sensation ceases the moment the spinal cord is severed.

Young fowls are easy to kill, but with an old bird some difficulty may be met with. If necessary for a novice to kill an old bird, or a turkey or goose, it is advisable to hang up the bird by a soft string tied round its legs, and then to give it a smart stroke on the back of the head with a stick, and when unconscious from the blow, to dislocate the neck in the usual way.

Killing by means of bleeding may be done by palating ; the bird is hung up by the legs, the mouth is opened and a sharp knife driven through the roof of the mouth upwards into the brain and the bird allowed to hang until bleeding stops. Another plan is to cut the throat, but this is not recommended and is inhumane.

Plucking. The bird should be plucked while warm, as it is much easier, and there is less liability of tearing than if allowed to cool. The plucker should be seated, holding the bird with the head hanging down to allow the blood to run down into the neck. Tighten the skin slightly with one hand and draw the feathers up and from you with the thumb and forefinger of the other, taking care never to tear the skin. The head feathers should be left on. When the bird is plucked, any pin-feathers or stubs remaining must be carefully removed and the carcase singed with lighted straw, the greatest care being taken not to blacken the flesh. The bird is held by the head and legs and passed quickly through the flame.

Shaping. The fowl should be shaped while it is still warm. The Sussex shaping board is in the form of a V-shaped trough. The front



POULTRY SINGER (Brass-lacquered)

board is five inches and the back six, joined together at rather less than right angles. The wings are folded close to the back and the legs laid flat at each side of the breast, and the bird placed breast downwards in the trough with the head and neck hanging over the side. Each bird is laid close to the next and when the trough is full a smooth board is placed on the backs of the birds and weighted down; but it is always advisable to have birds of the same size in each shaping board in order to obtain a uniform pressure. The birds must remain in the troughs until they are quite cold and set, and will then be ready for packing.

TYING DEAD POULTRY FOR MARKET

Some fatteners, especially those engaged in private trade, tie all the birds whilst warm, and it certainly adds to their appearance. What is called the Devonshire fashion is one of the best and is accomplished as follows. Cut the sinews of the middle toes to prevent doubling up, and fasten a piece of string to each. Lay the bird on its back and press the legs close to the body at the hocks, send the feet towards the wings, placing a toe under each wing, and secure them thus by tying the two pieces of twine at the back. Pass another piece of string through the legs, near the hocks, drawing them down to the end of the heel bone, until the hocks nearly meet, and tie the ends of the string under the tail.

Packing. Before packing, the dead fowls should be graded or sorted into lots of even size and quality, not varying more than half a pound in weight, and as uniform in appearance as possible, for an uneven lot will never fetch top price. The best packages are wooden, non-returnable crates, to hold one dozen birds in each layer. The lids should be nailed

down, but ventilation should be given by means of a series of holes along the sides. Some railway companies provide special hampers for the conveyance of dead poultry to market. Clean dry straw or wood wool are the best materials for packing. First a layer of straw should be placed at the bottom of the box, and covered with white paper; on this the birds are laid in a double row, with their sterns to the sides of the box and their heads down the centre, or each head and neck may be laid straight across between the opposite birds, a piece of paper covering each, and



PACKING POULTRY AT LURGAN

a large sheet covering the layer of birds, then more straw to form a top padding. Vegetable parchment, commonly known as butter-paper, is the best, for being strong and tough it prevents the straw marking or bruising the skin of the birds. Some firms call attention to the number of otherwise good fowl which are spoilt in transit by being packed before becoming perfectly cool, and, as a result, arriving in a blackened, bruised and tainted condition; this deterioration also arises from careless packing with insufficient padding and paper. When the birds are graded and packed the crates should be branded according to contents and weights, thus, X. Y. 1 doz. $4\frac{1}{2}$ –5 lb.

Marketing. The London (Leadenhall and Smithfield Central) markets are generally recognised as the best for prime, well-finished poultry, and there the best prices can be obtained for birds of fine quality from 5 lb. weight and upwards, and for this class there seems always to be a constant demand. Smaller birds may often be sold more profitably in English and Scottish towns, in which the supply of good birds is seldom overdone.

When choosing a salesman, unless he is a "market salesman" under the supervision of the Markets Committee, and therefore bound to pay up promptly, it will be found most necessary to get good trade references, for perhaps no trade gives such scope for frauds as the poultry trade.

Before sending off a lot of birds it will be well for a beginner to write to a reliable firm and inquire for current prices and information relative to the best dates for despatch, &c. Birds should, if possible, be despatched so as to arrive in the early morning, as the London wholesale markets open at 5 o'clock A.M. and close at 2 P.M. The fowl should be consigned at "Owner's Risk" rate, and the firm to which they are consigned duly advised of their despatch. The best days for fowl to arrive at the London markets are :

Leadenhall—Mondays, Wednesdays, Thursdays, and Saturdays.
Smithfield (Central)—Tuesdays, Thursdays, and Fridays.

PETITS POUSSINS OR MILK CHICKENS

The raising of *petits poussins* or *poulets de lait* forms a very important branch of the poultry industry in France and Belgium. Between Easter and July there is a moderate demand for them in London, but Mr. Charles Brooke informs the writer that the great drawback to the *poussins* trade is that so few rearers can be got who will take the amount of care which is absolutely necessary to bring them to perfection, therefore the demand is somewhat limited. These milk chickens are killed at from four to eight weeks old and weigh from eight to twelve ounces; they are dressed like quails, and each guest is served with a whole bird. In London, prices in the season range from 1s. 6d. to 2s. 6d. each. Indian Game, Dorking, Faverolles, Buff Orpingtons, and Houdan crosses are useful for this purpose, but the cockerels of non-sitting breeds answer very well, as they develop so quickly and can be picked out from the pullets at a very early age. The chickens, when hatched, should be fed for the first few weeks on good nutritious food to build up a frame, and then put on a diet of ground oats mixed with hot milk and a small quantity of rendered fat. In France, barley meal is used for feeding. Grit is always supplied and milk is given for drink. Some authorities prefer to keep the birds under cover during the whole time, but great care is required to prevent cramp from over-confinement.

Chickens thus reared on a forcing diet would not be likely to succeed as stock birds, so that only those intended for killing should be treated.

Sale of Old Hens. Old hens should always be sent alive to the markets, as they are chiefly in demand for shipping, for poultry supplies on sea voyages, and a very large number are bought by the Jews.

Seasons for Rearing Chickens. The natural time for birds to reproduce their species is spring or early summer, but, with the domestication and evolution of the Jungle Fowl and its descendants to meet the requirements of man, these natural habits have been altered by breeding and selection until the domestic fowls of the present day practically lay and hatch at all

seasons of the year. But, as springtime and summer are the natural seasons, we must bear in mind that the rearing of chickens in late autumn and winter is, so to speak, an unnatural process, and the difficulties which are involved must be overcome by making certain provisions, which in spring and summer are quite unnecessary.

Unless the surroundings are exceptionally dry and sheltered, late autumn- and winter-hatched chickens must have artificial shelter provided by placing the coops under sheds or in houses, where the young birds may exercise during the many cold and stormy days experienced at these seasons.

One of the greatest causes of mortality amongst autumn and winter chickens is a form of cramp, not, as generally supposed, brought on by cold and damp, but arising solely from the want of proper and daily use of the sinews of the legs and feet, because of the flatness and sameness of the surfaces of the floors in coops and brooders and sheds in which the chickens run ; and this form of cramp is more prevalent amongst artificially reared chickens than in those reared by hens. The floor of a shed or house for winter chicken-rearing should be of earth. To prevent the depredations of rats it is often advisable to put in concrete floors, but these must be covered with fresh earth or sand to a depth of several inches, and this must be renewed at intervals, otherwise it will become stale and foul. One reason why winter chickens do not thrive is that their existence is so monotonous. In summer, when running free, they rush hither and thither, new excitements and amusements appearing in every clod or tuft of herbage, but in winter the space is necessarily so confined that they know every inch of the ground, and for want of any fresh interest they become dull and listless.

A little thought and intuition on the part of the attendant can soon obviate this, by providing daily a sort of "Winter Garden" for their delectation.

The Importance of Light and Ventilation. Where several coops are placed under a shed or in a house, these must be well lighted and well ventilated. On days when the chickens cannot run out, a wheelbarrow-load of grass-covered sods should be thrown down and left rough and unbroken. Over these sods, or spadefuls of earth, the chickens will climb and scratch, calling all the sinews of the legs and feet into use and thus promoting development and growth. This earth can be turned over several times and removed entirely for a fresh supply, as often as practicable. It should not be too dry, as though wet and dirt and dampness are bad for chickens, the natural sappiness of freshly dug earth is very beneficial. The writer has seen chickens suffering from cramp and having a dried-up appearance from remaining too much in the hot chamber of a brooder during a severe frost, completely cured and made plump and healthy by being forced daily to exercise on freshly dug-up earth.

Though in spring there are many wet and inclement days, there are also fine and sunny ones, and on these chickens get ample exercise ; still, in bad seasons, shelter and artificial incitements to exercise should be

provided. For instance, a big old plant of cabbage, pulled up, roots and all, and given to the birds will be a source of much enjoyment and soon every green leaf and blossom will be stripped off. Cabbage is one of the best of green foods, but should always be given in whole plants, or large leaves, in preference to chopping.

Growing chickens relish earthworms very much, and nothing seems to give chickens greater pleasure than to have a piece of ground dug over, so that they can catch the worms and insects. During the short winter evenings chickens should be fed about eight or nine o'clock by lamplight. Dry food is best, and the lamp, preferably a "hurricane" or stable lantern, can be hung in the shed for about half an hour.

Seasons for Marketing. During the spring, well-fed young chickens weigh from $2\frac{1}{2}$ to 4 lb., top prices being usually obtained in May. Moderate-sized, good birds sell best from March to July, and large, well-finished fowl are most in demand during the winter months, November to February.

The duckling season is from February to June. Fatted ducks sell best in autumn and winter. Goslings, or green geese, in May and June, moderate-sized, fat geese at Michaelmas, and large, fat geese about Christmas time. Turkeys are most in demand just before Christmas and for a short time after; the larger the turkey the higher the price in proportion, provided the birds are of good quality and straight-breasted.

The following list gives an average of the prices given by Messrs. C. and A. Brooke, Central Markets, London, for one year, for fat Sussex poultry, all qualities:

January, 3s. 6d. each; February, 3s. 6d.; March, 3s. 9d.; April, 4s. 6d. to 5s.; May, 4s. 3d. to 4s. 9d.; June, 3s. 9d.; July, 2s. 9d.; August, 2s. 6d.; September, 2s. 9d.; October, 2s. 6d.; November, 2s. 9d. and December, 3s.

The prices vary each year according to supply and demand; therefore, as Mr. Chas. Brooke points out, information respecting prices given in books is often misleading, so that the chicken-rearer will be well advised to apply to the salesman selected for quotations of current prices and further information, when the time approaches for selling the birds.

The Onion and its Great Importance as a Chicken Vegetable. It would be difficult to over-estimate the value of the onion and the benefits to be derived from the various forms of this useful vegetable as an adjunct to the feeding of young chickens. It stimulates the appetite, regulates the digestive system, and acts as a preventive of "gapes," that terrible scourge of chickens; and it will be noticed that chickens which get a constant supply of onions are immune, or almost so, to cold or catarrh. All who attempt to rear chickens should make a point of growing onions in some form, the most useful being leeks and chives. The whole plant can be utilised in the former, and in growing leeks for chickens it will not be found necessary to plant out and earth them up as if for table as the green part can be chopped and mixed with the food. A bed of leeks will give a good supply during the winter and early spring, before the chives come into season. The latter throw up green tops somewhat

resembling tufts of young rushes, but they are tender and juicy, and after cutting, the roots throw up fresh sprouts. These forms of the vegetable which produce a large amount of juicy green stalk seem to be the most relished, but the ordinary onion bulb is also excellent, and it will pay to spend a part of the money necessary for food on onions in some form. Garlic also should be in every poultry-keeper's garden, and if somewhat unpleasant to handle, the chicken-rearer will be amply repaid by watching the avidity with which chickens pick out the juicy bits of garlic stalk and rush wildly about, followed by others anxious to snatch the coveted prize. Owing to its strong odour, garlic is the best of this tribe to ward off the danger of "gapes," or, if the chickens are already attacked, garlic or, if this is not available, plenty of onions should be added to the food, at the same time not neglecting the use of some of the cures on the market, such as "Blackerite" or "Camlin."

Onions are particularly useful in spring and winter, and for chickens which in summer have not a very free pasture range, grit and water must be supplied at all seasons.

Foods for Poultry. The feeding of poultry is a very important matter and makes all the difference between profit and loss. It is necessary to consider the various circumstances, such as situation, age, season of the year, space at command, &c., in order to arrive at the correct diet. The properties of the various foods must be considered as to their flesh-, bone-, or fat-forming properties.

Albuminoid ratio means the proportion of albuminoids, or flesh-, bone-, and tissue-forming properties in proportion to fats and carbohydrates, or heat-producing and fat-forming foods. The ratio now generally acknowledged to be the best is a proportion of one part albuminoids to $4\frac{1}{2}$ or 5 of carbohydrates. All foods are composed of six constituents, albuminoids, carbohydrates, fats or oils, fibre, ash, and water, but in consulting a food table it must be remembered that these tables often differ slightly, because very few samples of the same grain are exactly alike in composition. Mr. Edward Brown, F.L.S., in his book on "Poultry-Keeping as an Industry for Farmers," recommends the following percentages :

(1) Albuminoids or nitrogenous compounds form bone, horn, feathers, skin, blood, muscle, eggs : growing birds, 15 per cent. ; adults 12 per cent.

(2) Soluble carbohydrates support respiration and animal heat : summer, 55 per cent., winter, 65 per cent.

(3) Fat gives oily secretions and softens flesh : breeding or laying stock, 2 per cent. ; fattening, 5 per cent.

(4) Woody fibre of small value.

(5) Ash of small value except lime.

A Properly "Balanced" Dietary. When a dietary is so arranged, having the correct proportions between albuminoids, carbohydrates, fats, &c., it is said to be a properly "balanced" dietary. Considering the various cereals separately, oats is an almost perfect food, because its ratio is about 1 : $4\frac{1}{3}$. If, therefore, only one kind of grain were

available for poultry, oats would be the one to choose. Wheat varies very much according to sample; a large-grained floury wheat will contain too large a proportion of starch, and the proportion of albuminoids will be too low. The most albuminous part of wheat is the bran and germ, therefore bran, middling or pollard, is richer in flesh-forming materials than flour; small-sized, sound wheat is therefore the best for poultry-feeding. Buckwheat is largely used in France for fattening fowl. Its albuminous value is lower than wheat, but it is rich in oils and is a valuable and useful addition to the hens' rations, though on account of its dark colour, unless birds are trained to eat it, they may waste it at first. Barley is a heat-producing and fattening food but does not contain much oil. Maize, or Indian corn, is the most oily of the ordinary grains, but has a tendency to produce yellow fat. It is also rich in heat-producers and is therefore to be avoided in very warm weather. The albuminoid ration is too low. Peas and beans contain a very large proportion of albuminoids compared to the other groups, but they are very deficient in oils, hence peas or beans would be suitable to use in conjunction with maize in order to raise the quantity of albuminoids in a maize dietary. Peas and beans are given to pigeons and game fowl to keep them in good hard condition. They constitute a very valuable addition to the food of stock birds, they are also largely used in the composition of the various dry-food mixtures.

Dari, sometimes called Indian millet, is a grain much appreciated by poultry, and being usually about the same price as wheat is within the reach of all who wish to give it a trial. Most "dry foods" contain dari. It is a round-shaped, white grain, larger than hempseed.

Rice is useful as a variety for poultry, but its nutritive value is poor. Rice, boiled with milk, is recommended when adult fowl or chickens are suffering from diarrhœa.

Hempseed is very rich in oils and a small portion of this seed may be used with advantage in cold weather. Too much hemp is dangerous to fowl and is liable to cause liver disease and brain affections in chickens.

Millet and canary seeds are very useful to form part of a dietary for young chicks, but are too expensive to consider as foods for adult stock.

Malt sprouts have a very high albuminoid ratio and are excellent as an addition to the dietary, having most valuable digestive qualities.

Clover hay, cut and scalded, is of very high value and is very largely used by American egg-farmers and of late years in England. The method of feeding clover is by mixing it with the soft food.

Potatoes are of a very starchy nature and not of much food value, except for mixing with meals to give bulk.

Carrots, parsnips, turnips, &c., are all useful for mixing with meal to form the morning mash, as also are nettles, scalded or chopped raw.

Onions and garlics are good for chickens, chopped raw and mixed with the mash, but should not be fed to laying hens if the eggs are required for table purposes.

Meat, fresh or dried, cut green (or fresh bones), *dried fish or meat*

meals, are all useful for poultry, and should be added to the dietary unless insect life is very plentiful.

Sunflower seed is of great value, having a high nutritive value and being rich in oils.

Cockle or cockled seed is the screenings taken from wheat by a "cockle machine," and is not, as often erroneously supposed, the seed of corn-cockle, *Lychnis githago*, which is a powerful irritant. Cockled seed contains broken wheat, wild mustard and rape, clover, linseed, and the seeds in innumerable wild grasses and weeds, and is largely used in making the cheaper, dry-food mixtures. It can also be ground up fine and used as meal, and some authorities maintain that it is an excellent food for poultry. Various samples of cockled seed differ very largely in value.

Kitchen scraps, such as potato and vegetable parings, vegetable water, waste meat, and fat, are all useful adjuncts in feeding fowl. Of course all waste vegetables should be cooked before being used, except lettuce, cabbage, and onion.

White bread. Bread scraps may be used, but white bread is not recommended as a staple diet for chickens, being too starchy; brown bread is much richer in nutritive qualities.

Grit, though not actually a food, is necessary to poultry to assist digestion, and where abundant supply of natural grit cannot be obtained, artificially prepared grit, of which there is plenty on the market, must be supplied.

Oyster-shell. To make egg-shells and bone, fowl require lime in some form, and for this crushed oyster-shells are most commonly used. Either oyster-shell or lime rubbish, such as old mortar, or the refuse left after lime-washing, should be always within the reach of fowl, but on no account should either lime or grit be mixed with the soft food.

Laying spices, if used at all, must be used most judiciously. Some people administer these condiments in order to induce pullets to lay. They undoubtedly stimulate the ovary for a time, but in the long run the effects will be most disastrous. Occasions, no doubt, do arise when a small quantity of spice can be administered with advantage, so that a recipe is here given: Gentian, 4 oz.; fenugreek, 8 oz.; cayenne, 2 oz.; brown sugar, 8 oz.; liquorice, 2 oz.; salt, 2 oz.; bone-meal, 4 oz.; powder and mix. A tablespoonful to every ten or twelve hens may be given twice a week mixed with the soft food.

The best tonic for fowls. Sulphate of iron $\frac{1}{4}$ lb., sulphuric acid $\frac{1}{2}$ oz., and water 1 gallon, mixed in an earthenware vessel, allowed to stand for a day and then bottled for use. Dose—a teaspoonful to every half-pint of drinking water or in similar proportions in the water used to mix the soft food every third or fourth day. Metal vessels must not be used for this mixture, as chemical action is liable to set in (Douglas Mixture).

Suitable Mixtures. The following are given by Mr. Edward Brown, F.L.S., in "Poultry as an Industry for Farmers and Cottagers," as suitable mixtures for breeding or laying stock:

(a) *Summer—Soft food*

Barley meal	1 part.
Fine thirds or middlings	1 part.
Turnips (cooked)	2 parts.

or

Barley meal	1 part.
Fine thirds or middlings	1 part.
Potatoes (cooked)	2 parts.
Clover, hay, chaff	1 part.

Albuminoid ratio of above, 1 : 4.5.

Hard food

Equal parts of oats and wheat, albuminoid ratio, 1 : 5.8.

(b) *Winter—Soft food*

Indian meal	3 parts.
Pea meal.	1 part.
Barley meal	3 parts.
Bran	1 part.
Potatoes (cooked)	3 parts.
Meat (granulated)	$\frac{1}{2}$ part.

Albuminoid ratio, 1 : 4.8.

Hard food

Equal parts of wheat and barley. Albuminoid ratio, 1 : 6.6.

How to feed. Fowls at liberty or in large runs should be fed twice a day, soft food in the morning and grain in the evening. The soft food should be given in troughs to prevent the contamination of the ground. In wet weather or for fowls in small runs the grain should be fed about midday and be covered with chaff or litter in a dry place, so that the birds may be employed in scratching for it and thus obtain beneficial exercise.

Fresh-cut green bone is an excellent food for poultry as a substitute for insect life. It contains 3 to 4 per cent. of nitrogen, 49 per cent. of lime phosphates, and 9 to 10 per cent. of carbonate of lime. Mills are sold for the purpose of cutting green bones to a proper size.

Fattening Diet. For fattening fowl, whether by trough feeding or by cramming, no food is as good as Sussex ground oats. This is not oatmeal, but is made by a special milling process in which the hull of the oats is ground up together with the kernel into a fine flour. A small quantity of barley is mixed with Sussex oats to facilitate the grinding. The meal thus obtained is mixed with sour milk or butter-milk into a thick paste, just so thick that it will not run off the feeding-board and thick enough to prevent the birds lifting mouthfuls into the coop. To this mixture a small quantity of clarified mutton fat is added, commencing with an allowance of a quarter of an ounce per bird each day and working up the quantity to double that amount during the last part

of the fattening period. The following mixtures are sometimes used in place of ground oats :

A mixture of two parts of buckwheat meal, two parts of ground oats, and one part of fine Indian meal mixed with sour milk, or a mixture of topping, barley-meal, and ground oats and middlings in equal parts. Indian meal, unfortunately, tends to create yellow fat, and for this reason can only be used with other meals. Potatoes, well cooked, may be mixed with the meals for trough feeding.

Fattening-coops are constructed with barred floors, the upper part of each bar being slightly rounded and placed 2 inches apart, so that the droppings may fall to the ground under the coop, which should be raised. The front of the coop is made of bars 2 inches apart, and the two middle bars of each compartment are removable. The troughs are placed along in front of the coop, and the birds feed by putting their heads through between the bars. A fattening-pen to hold fifteen or eighteen birds would be 20 inches high, 20 inches wide, and $7\frac{1}{2}$ feet long. This would be divided into three compartments to hold five or six birds each. Single birds do not thrive nor feed so well as if penned in lots of five or six, as each stimulates the other to feed eagerly. Birds are usually fed from troughs for the first ten days and afterwards crammed by machine. It is not advisable to prolong the fattening process beyond three weeks.

Chickens for home use may be greatly improved in plumpness and flavour if given a course of trough feeding before being killed for table. Between each meal, that is, twice daily, the troughs should be scraped and cleaned and some gravel spread on them. Under no circumstances should food be allowed to remain in the troughs from one meal to another.

Nettles for Fattening Fowl. In hot weather, birds in process of fattening may require a cooling medicine. Some give flowers of sulphur, and others prefer to give nettles chopped and scalded and mixed with the food.

Grit. It is necessary for birds to have a supply of grit within reach to assist them in digesting their food. The gizzard of a fowl acts like a mill, and the grit, or small stones, are swallowed for the purpose of assisting in grinding the corn and other foods. The gizzard of a healthy bird will always be found to contain a number of small stones. Birds left at liberty will find sufficient grit for themselves, but when kept in enclosed yards poultry must always be supplied with suitable grit, either in the form of good sharp gravel or one of the many "grits" on the market, which cost about 5s. per cwt. For those who have but a few fowls and who have leisure to do so, ordinary broken delf, smashed up with a hammer on a stone in the run to about the size of barley-corns, will form an excellent grit-supply. There are several small "hand grit-smashers" advertised.

Cockerel and Pullet Breeding-pens. To speak of a pen of birds as cockerel or pullet breeders may convey a false meaning to the uninitiated, viz., that the pen of birds so described will produce more of one sex than of another, but this is not the meaning of the term. As the exhibition

males and females of some varieties of fowl are bred from totally different families of the same breed, to state that a certain bird is a "cockerel breeder" means that it belongs to a strain or family which can be depended on to produce males of the required standard of colour. Taking Partridge Wyandottes as an example, a cockerel-breeding cock would require to be up to the required show standard and to belong to a cockerel-breeding family—in other words, to be "cockerel-bred"; while the cockerel-breeding hen would not be an exhibition bird in colour and markings also, but should be of the true Wyandotte type. The pullet-breeding cock also would not be an exhibition bird, but the hen used to breed females would have the standard show colour and markings. A mismarked cockerel-bred cock would, of course, not be a pullet breeder, nor would a mis-marked exhibition hen be a cockerel breeder, though it would in some cases be difficult to distinguish between mismarked exhibition males and females and the true pedigree-bred cockerel and pullet breeders.

In many varieties of fowl both sexes are successfully bred from the same pen, and in this case if an Orpington cock, for instance, were described as a good pullet breeder it would mean that his progeny had been sound to excel on the female side, or would be likely to do so.

ARTIFICIAL INCUBATION

Incubators. There are several good machines on the market, and, in purchasing, the poultry-keeper should remember that the best is cheapest in the long run. Directions for working are supplied with the machines.

Suitable Places for Working. An incubator-room should be free from draughts yet well ventilated and free from vibration. Some machines are intended to stand on a table while others are furnished with legs. Care must be taken in setting up a machine that it is perfectly level, and a spirit-level will be necessary to find the correct adjustment. A room having a cement or stone floor will be found most free from vibration, but incubators are often worked successfully in rooms with ordinary boarded floors. A margin of space should be allowed all round each machine when placing, in order to allow the free circulation of air.

Temperature. The temperature for hatching varies from 102° to 106° , but, generally speaking, from 103° to 104° will give the best results, the thermometer to be about one-eighth of an inch above the eggs. It is best to allow about 103° for the first ten days, allowing 104° later, and at the time of hatching the machine will run up to 105° or even 106° .

Turning the eggs is necessary to ensure success, and twice daily eggs in the process of incubation must be turned, and at one turning the outer and corner eggs should be shifted to the inside and *vice versa*.

Moisture. Some machines are so constructed as to require no moisture beyond what they absorb from the atmosphere; other makes are fitted with water-trays, which may be filled at the start or at about the tenth day, according to the discretion of the operator. Many experienced

authorities advise the latter course. Too much moisture causes the embryo chicken to become too large and the evaporation of the fluid within the shell is retarded, causing the chickens to die at the time of hatching or to hatch out sticky-looking instead of clean. On the other hand, too dry an atmosphere causes the membrane inside the shell to become very tough, and the chicken also dies, being unable to break its way out.

Airing or Cooling the Eggs. For the first ten days, except in very warm weather, the eggs require no more cooling than that received during the time of turning. The time may be gradually increased to ten minutes or a quarter of an hour towards the end, but once the eggs begin to chip no further cooling or turning is required, and the drawer should not be opened until it is thought the hatch is completed or nearly so, and then those chickens which are out must be removed very quickly and the machine shut up again. Some machines are so constructed with a glass door that the chickens as hatched make for the light and slip down through a space left between the tray and the door into the drying compartment underneath. In this case the machine need not be opened until all are out of the shells. In the drawer and drying-box patterns of incubator with a full hatch, it is sometimes advisable to quickly remove the chicks when the hatch is about three-quarters out to prevent overcrowding or "capping," which means that with the movements of the free chicks the empty shells may get shoved on to the unhatched eggs and prevent the chicks escaping.

Putting in fresh eggs during a hatch is not advisable in the smaller sixty to one hundred egg machines. An egg during the third week registers several degrees higher than one newly put in, and if a fresh egg were under the thermometer at 104° , the nearly hatched eggs might be at 106° and *vice versa*.

Testing the Eggs. At the seventh day unfertile eggs which remain quite clear should be removed, after examination in a darkened room before a lamp. A fertile egg will show a defined darkness below the air-space and a cloudy appearance throughout, and will at the tenth day be quite opaque except towards the small end. If any eggs are doubtful, they should be marked and examined again until the operator's experience makes detection more certain. Some eggs seem to develop with more rapidity than others; this may be caused by the egg containing a stronger germ or being fresher.

Age of Eggs. The fresher the better, and not over ten days old for incubators. Older eggs should, if required to hatch, be placed under hens.

Hatching with Hens. When a hen selects her own nest and lays until she has a sufficient number of eggs to hatch, usually thirteen, she generally brings off a good brood. Where many hens are kept this plan is not practicable, so that when the hen evinces a desire to sit, she must be provided with a suitable nest, if possible not in the house with other fowls, and where other hens cannot disturb her by getting into her nest to

lay. Nest-boxes should be about 18 inches high by 15 inches square, with the front fitted like a door and covered with wire netting. About 5 inches deep of the lower part of the front should be a fixture, nailed on to keep in the nest materials. Some hens can have their nests left open and can be depended on to come off regularly to feed and return at the right time, but when a number of hens are sitting in a house it will be found best to liberate only a few at the same time, namely, those whose eggs are at the same stage of incubation, otherwise confusion may occur by interchange of nests. All hens should be dusted with insect powder before setting and again when removing the chicks from the nest. Before putting the hay or straw in the box it is best to put a layer of earth well packed into the corners and slightly hollowed towards the middle. This makes a good foundation and gives sufficient moisture. Some people sprinkle warm water round the nest a few days before hatching, but this is only necessary in a dry house in dry weather. Strict cleanliness must be observed in the hatching-house, and all old nests, once used, be renewed, lime or Izal powder well sprinkled in the bottom of the box and the floor constantly swept, otherwise as soon as genial weather sets in, about April, fleas will commence to breed in the warm litter under the hens. The larvæ of fleas are small white maggots, and are much easier to destroy than if allowed to grow into fleas.

Sitting hens should leave the nest for from ten to twenty minutes daily to feed and exercise. If a hen is disinclined to come off, she must be gently removed. Clean water, grit, and a dust-bath should be within their reach and plenty of grain; maize, being a heat-producer, is good, also wheat or barley, or a mixture of both. Hens should never be fed on the nest except when a clutch of eggs is hatching unevenly and she is forced to remain on them longer than usual. In that case some food may be given to make her satisfied and quiet. The usual number of eggs for a hen is thirteen, but in mild weather a large hen can cover fourteen or fifteen, and hens have been known to hatch out twenty successfully.

Geese and Turkeys are usually allowed to hatch their own eggs, but as some lay more than they can cover, the earlier ones of the batch are placed under hens.

Duck eggs are usually hatched under hens. Ducks will sit, but as a rule are not very good mothers.

Young Turkeys are best reared by their natural mother, as hens leave them too soon.

Incubation (periods of). Fowl, twenty-one days; if eggs are very fresh, twenty days; if stale, twenty-two; chicks come out six to twelve hours after chipping. Ducks, twenty-seven to thirty days, usually a lunar month; ducklings chip the shell about twenty-four hours before making their escape. Muscovy ducks, twenty-eight to thirty-four days. Geese, thirty to thirty-one days. Turkeys, twenty-eight to thirty days. Pigeons, fourteen days.

Rearing Chickens Artificially. Chickens can be reared in brooders

with marked success, provided a proper machine is selected and the operator exercises proper care and is gifted with a reasonable amount of intuition. There are various good brooders on the market, but there is one very important item connected with machines of the sort, viz., their advertised capacity is usually over-estimated, and a "hundred-chick" machine would be very unlikely to rear a hundred chickens successfully up to six or eight weeks old—the period for which heat would be required. For the first week, or even two, things might go on pretty well apparently, but soon there would be over-crowding, and overcrowded chickens never prosper. It is, therefore, safe to say that in winter, when heat is required for a longer period, about thirty chickens will be quite sufficient for an advertised "hundred-chick" machine, and perhaps in summer, when artificial heat can be dispensed with earlier, about forty. Or two brooders could be purchased, and after the first week the chicks might be divided between them. It is very important that an artificial rearer should be thoroughly ventilated and still free from draughts. During the first few days a temperature of 90° Fahr. should be maintained, the temperature to be taken half-way between the floor and the ceiling of the "hover," when the chickens are in; gradually this should be lessened to 80° after the fourth day, and about 75° after the end of the first week. On a warm day the lamp must be lowered, according to the amount of sunshine, and a higher flame turned up at night. Too much heat is to be carefully avoided, and is worse even than too little heat. If the brooder is too cool, the chickens will remain constantly under the hover and will pipe in a discontented tone. The bad effects of too much heat are not noticeable at first, but after about ten days the chicks begin to lose the proper use of their legs and to walk in a cramped manner. In winter, if the weather is very severe, this may occur from insufficient exercise and remaining too much in the warmth of the hover. When this tendency to cramp appears, the chicks must be induced to exercise outside the hot chamber, and the outer covered run should be covered with earth in which they can scratch and exercise. If the ground is too wet to dig up for them, some dry earth or sand must be provided, or, failing these, peat-moss. An uneven surface, such as earth dug over, is beneficial, as the sinews of the legs and feet are better exercised than if on a flat, smooth surface. In very cold weather it is well to have a pane of glass let into the boarded side of the covered run, so that, if necessary to cover the wire front with canvas, the sunshine will not be shut out. In placing a brooder, the prevailing point of the wind must be taken into account, and the most sheltered and yet sunny position chosen. No brooder should be placed on a low-lying spot likely to be flooded during heavy rains.

Rearing Chickens with Hens. When the chicks are about twenty-four hours old, the hen and her brood should be removed from the sittir-g-box to more roomy quarters. In fine weather it is usual to place hens with chickens in coops in the open, either on grass or on a spare plot of garden ground which can be dug over. In winter, unless in very

sheltered situations, coops should be, if possible, placed under an open shed, or in the shelter of a high wall or hayrick, and in such a position that the full benefit of the sunshine will be obtained. In hot summer a cool, shady place should be chosen, such as the side of a grove or plantation, in which the chicks can shelter from the hot sun. Outdoor coops must be weather-proof, and should be made with floors unless for use on very dry soil. The floors should be well covered with dry earth or fine sand or peat-moss, sand being preferable. Chickens under a week old are best confined to their coop, which should be provided with a run and be moved daily if on grass; if on bare earth, the space occupied by the run should be dug over. After a week the hen, if convenient, may be released with her brood on fine days, or on showery days the chicks may be allowed out and the hen confined. Some poultry-rearers use no run, allowing the chicks to pass in and out through the barred front of the coop in which the hen is confined. A chicken-coop for a hen and brood should be at least 2 ft. 6 in. long, 1 ft. 9 in. back, 2 ft. in front, breadth 2 ft., with a run about 4 ft. long by 2 ft. 6 in. wide and 1 ft. 6 in. high. The slide may be at the end, or, if a barred front is preferred, the run will be placed with its open end to the bars. There are numbers of good patterns of coops on the market, but those with insufficient ventilation and light should be avoided.

General Management. The strictest cleanliness must be observed in the houses and coops, and a keen look-out kept for insect pests both in the coops and on the chickens themselves.

Feeding Chickens. The chickens require no food for at least twenty-four hours, as during that time the egg-yolk is being absorbed. There are two methods of feeding chickens, the old or soft-food method, and the "new" system of dry feeding, which is one of the old American customs.

Soft Feeding. Under this system chickens are usually fed first with hard-boiled egg and bread-crumbs made into a crumbly mass. Some people prefer to make the egg into a custard with milk before moistening the bread, and others to use the egg raw by whipping it and mixing with bread-crumbs or oatmeal. Many dispense with this entirely, and commence by feeding with biscuit meal moistened; others use various mixtures of meal. In all cases the food should be mixed crumbly and fed on clean boards or troughs, no food being allowed to remain over from one meal to another. Grit and clean water must always be supplied. Some chicken-rearers invariably boil all water before supplying it to chickens, others give no water but use new milk in its place. If healthy chickens have access to water from the commencement, they will not drink too much, but if only supplied sparingly they are liable to do this. Sickly chickens very often drink too much.

Dry feeding has of late years come very much into vogue, being so much less troublesome than soft feeding. The danger of diarrhoea caused by stale, dirty, or sour food is obviated and the chicks thrive remarkably well. In damp situations, and especially with artificially

reared chickens, the dry-food method is a great boon. Most of the dry-food mixtures contain canary, millet, hemp, and dari seeds, rice, wheat, maize, oatmeal (or groats), peas, &c., in various proportions, and often granulated meat or dried flies, particles of charcoal and grit. Chickens can also be reared on cracked wheat, groats or rolled oats, cracked maize and granulated meat. Chickens reared in this way are very strong and able to withstand disease better than those reared on soft food.

Green food must be supplied, and even on a grass run chopped onions, cabbage, lettuce, &c., may be fed with advantage. Onions or garlic are said to prevent gapes. Dry-fed chickens must have an unlimited supply of clean water and sharp flint or mica-crystal grit, as without sufficient grit this system will be an absolute failure. After two or three weeks chicks may be gradually given a little soft food, and at six weeks old the meals should be alternate grain and mash. *Morning*, soft food ; *noon*, dry food ; *afternoon*, soft food ; *evening*, dry food. In winter, or when insect life is not very plentiful, meat in some form should be supplied. Some poultry-breeders mix the soft food with milk, which acts as a substitute for meat, and both may be used if available. There can be little doubt a chick started on its career in life, even if only for the first week, on dry food, has a better chance than a chick under the old *régime*, and especially so if the bird is destined to be retained as a stock bird. Chickens intended for early fattening may, after six weeks, receive only one feed of grain per day, the last, and the other meals may consist of soft foods.

Times of Feeding. Dry-fed chickens will only require four feeds per day and, if necessary, even less, as food can be scattered in the litter sufficient to keep the chicks busy scratching all day. This is a great boon to poultry-lovers who are obliged to be away from home during the day. For those who have time to attend to their birds it is well to supply a little fresh food and replenish the water-vessels four times daily. On the other hand, to rear on soft food the chickens must be fed much more frequently—many authorities say “every two hours.”

After the first fortnight a coarser mixture of grains should be substituted for the finer grade used to start the chicks. This will mainly consist of wheat, dari, bruised oats or coarse groats, crushed maize, buckwheat, a little hemp and rice, cracked peas, &c. In choosing peas, Indian peas should be avoided as, though cheaper than Canadian or Russian, they are likely to cause scour.

Scour in chickens is a form of diarrhoea. In mild cases nature effects a cure without any medicine, but if several chicks are noticed ailing some boiled rice and milk should be given, sprinkled with precipitated chalk. The chief danger to guard against is the blocking of the vent by a crust forming externally and preventing free action of the bowels. Should this occur, the chick must be caught and the obstruction removed after bathing the part in warm water ; afterwards dry and anoint with vaseline.

Chickens over four months old, if required for stock, may be fed three times daily, and grain should form at least a third part of their diet. Those intended for the table may receive more generous and fat-forming dietary now, of which Sussex ground oats may form the staple part.

As Sussex oats cannot be obtained in all districts, various mixtures of barley meal, wheaten meal, and Indian meal can be substituted for feeding table chickens, but if it is intended to go in for cramming for market it seems ground oats of this description is an absolute necessity. In France, buckwheat meal mixed with barley meal is largely used, and also in Belgium.

Separating the Sexes. When chickens reach the age of three or four months at latest, the cockerels should be separated from the pullets and kept in quarters to themselves. Chickens never grow so large when the sexes are allowed to run together, for the cockerels soon begin to quarrel and lose flesh.

Weeding Out. As chickens grow they require more space, and when space is limited the required room must be provided by thinning out. When all are required for table, the largest and plumpest will naturally be killed off first, but in the case of pure-bred birds for stock purposes, the worst specimens, having defective markings, poor shape, faulty legs, feet or combs, should be killed off as soon as possible.

PARASITES OF POULTRY : INSECT VERMIN, INCLUDING FLEAS, LICE, TICKS, AND MITES

Fleas infest the house, being especially plentiful in warm weather. They breed in dusty corners and in old straw and litter, and not on the bodies of the birds, so that by strict cleanliness and constant changing of litter and the free use of powdered lime or litter shell, Izal powder on the floors and under the hay in the nests, and by dusting the birds with insect powder, these pests may be restricted. The house should be thoroughly lime-washed at least twice yearly.

Lice may be found swarming amongst the feathers, chiefly under the wings, round the vent and on the thighs. As they move very quickly and are much the colour of the birds' skin, it is often necessary to examine very closely to find them. Lice lay their eggs or nits on the feathers, and many species of them die if removed from their host ; thus a cold dead bird will often be found covered with dead insects. To rid the birds of these pests, observe strict cleanliness in the houses and dust all birds from time to time with Pyrethrum powder, which will kill the lice and cause them to come out and die on the outside of the feathers.

Ticks. Chicken ticks are larger than lice, and are found stuck into the heads and necks of chickens and under the throat. As their heads are buried in the flesh, insect powder has very little effect on them, and an oily dressing must be used. Any of the non-poisonous skin cures for dogs, made with sulphur and oil, will be effective, or the following emulsion : boil together equal parts of water and paraffin oil and stir in a piece of

soft soap, allowing $\frac{1}{2}$ lb. to each pint of liquid. A little of this applied with a tooth-brush to the heads and necks of the chickens will soon destroy the ticks. Mercurial ointment, often recommended, is sometimes followed by fatal results, and is liable to affect the brain, and therefore to be avoided.

Red Mites. These parasites infest the houses and live and breed in crevices, and are the hardest of all to deal with. They only attack the birds at night, and must therefore be dealt with in the houses. To ascertain if red mites are present in a house, examine the ends and under sides of the perches, where some are almost sure to be found. If there are any present in the vicinity, treat all woodwork, and especially the perches, with petroleum, rubbing it in with a brush, and thoroughly wash or spray the house with creosote. Some authorities recommend a wash made with lime, sulphur, and soft soap and water, or crude carbolic acid and lime-wash.

HINTS ON BREEDING

Mating and Breeding Poultry. The number of hens which may be allowed to run with a cock will depend on the breed and the circumstances under which the birds are kept. As a rule, for the heavy breeds, such as Cochins and Brahmas, four to six hens would be sufficient ; for Plymouth Rocks, Orpingtons and the like, six to eight in a confined run and eight to twelve if at liberty. For the lighter breeds, such as Leg-horns, a larger number may be allowed. If birds are over-mated, there will be a large percentage of unfertile eggs and the chickens will be weakly. Under-mating will also be liable to cause trouble, as the hens may be injured. In the early months and in severe weather, fewer mates should be allowed to a cock than during spring and summer.

Ducks. A pen of ducks should consist of one drake and three to five ducks.

Geese. One gander to three geese.

Turkeys are different, for one alliance is sufficient to fertilise a whole batch of eggs, and a larger number of mates may be allowed to each male.

Fertilisation. Eggs may be used for hatching from five to seven days after the cock has been introduced into the pen. It often happens that a bird of one variety escapes from its pen into that of another breed and a *mésalliance* takes place. It is a debatable question as to how long such influence would be felt, but it is probable that a few of the chickens hatched from the eggs laid about four days afterwards would be influenced by the second cock ; but, provided the hen was at once returned to her former mate, the influence of the wrong mating would very soon be obliterated.

Age of Stock. The strongest chickens are usually supposed to be obtained by mating year-old cocks with hens in their second season. Some breeders use two-year-old cocks with well-matured pullets, and

good results can also be obtained from year-old cocks mated with pullets which have been restrained from laying until fully grown and matured. As a rule, cocks over three years old are not very certain breeders, though with care a valuable cock can be used for several years longer, but such a bird would only be mated, perhaps, for a few months and then removed from the breeding-pen. Hens will breed as long as they go on laying, and this differs with the individual. The eggs of old *fat* hens would not be likely to be fertile or to produce strong chickens. The same remark applies to *ducks*. *Geese* are not at their best for breeding until they are two years old, and being long-lived birds, can breed for a great number of years.

Turkeys. Most breeders prefer to mate year- or two-year-old cocks with two-year-old hens or pullets respectively. Turkeys are not in their prime until the third year, but the drawback in using cocks of this age is that, unless specially dieted, they become too heavy and are liable to injure the hens.

DISEASES OF POULTRY AND PRACTICAL TREATMENT

Apoplexy. The bird suddenly falls down, the face and comb turning quite dark, and death frequently takes place in a few moments. This disease occurs most often in the case of old and heavy birds, but is sometimes caused even in young birds from a sudden quarrel, struggle, or strain of excitement. If the bird returns to consciousness, it should be placed in a dark pen and fasted for some hours, afterwards administering a 30-grain dose of Epsom salts and feeding on light diet. Apoplexy is caused by the rupture of a small blood-vessel in the region of the brain. In severe cases the best remedy is to open a vein under the wing and allow the bird to bleed until consciousness begins to return.

Bronchitis. The symptoms of this disease are difficulty of breathing, feverishness, rattling in the throat, and cough. Treatment: Let the patient inhale the steam of boiling water, in which a few drops of carbolic acid have been put, and administer two or three drops of camphor in a teaspoonful of glycerine. If a number of birds are attacked, a good remedy is to put ten drops each of sulphuric and nitric acids in a quart of drinking water, but this mixture must not be put in zinc vessels, and as these acids are dangerous to handle, the attendant must exercise great care. Bronchitis is a stubborn disease to cure and every fresh cold will aggravate it.

Bumble-foot. Symptoms: lameness due to a swelling in the ball of the foot caused by the accumulation of matter, which somewhat resembles a corn. Treatment: The foot should be poulticed and, when ready, lanced, making two openings crosswise like the letter X, taking care not to damage the bone. Sometimes after poulticing a hard lump can be removed without any cutting. After removing the growth, thoroughly cleanse the wound with antiseptic water, dressed with carbolised vaseline, and tie the foot up with a bandage

round the leg, under the foot, and between the toes, and keep the bird on clean hay. Bumble-foot must not be confounded with a swelling, which sometimes appears in the upper surface of the joint of the foot and which is best treated by painting with iodine to reduce the swelling. Causes of bumble-foot are cuts and injuries, such as those inflicted by heavy birds flying down from too high roosts on to a hard floor. Heavy-bodied fowls are most subject to this disease.

Cholera (fowl). A very fatal disease which runs its course in from twenty-four to forty-eight hours. The symptoms are listlessness, ruffled plumage, loss of appetite, great thirst and profuse diarrhœa, at first of a yellowish colour and afterwards green. The birds are found lying dead under their perches, and this is often the first thing which calls attention to the presence of this plague. Cases of recovery are not unknown, but in the virulent forms of the disease, death ensues so quickly that there is no time for treatment. When this disease is discovered or suspected, the sick fowls must be at once isolated and, if possible, the healthy birds should be removed to fresh quarters and given a change of diet. The whole poultry-run and houses must be thoroughly cleaned and disinfected, using hot lime-wash and adding $\frac{1}{4}$ lb. of carbolic acid to every gallon of the liquid. After the outbreak, the healthy fowls should be placed out on pasture land in portable houses away from the farmyard. The sick fowls which are isolated must be kept very clean and disinfectants used liberally in their quarters; all excrement and all dead bodies must be burned, and the attendant who looks after them should keep away from the healthy birds. A treatment recommended is as follows: Take 55 grains of blue (pill) mass, 25 grains of camphor, 38 grains of cayenne pepper, 48 grains of pulverised rhubarb, and 60 drops of laudanum, mix and make 18 pills, giving one every three hours. For drink, give scalded butter-milk or alum-water, and give easily digested nutritious foods, such as boiled rice and milk, bread, pollard or oatmeal mixed with boiled milk.

Some authorities advise the immediate slaughter and burning of all infected birds.

Cold in the Head (Catarrh). The symptoms of this common malady of poultry are running from the eyes and nose, froth collecting in the corners of the eyes, and sneezing. The causes are sudden changes of temperature, badly ventilated, close houses, foul damp runs. Treatment: If only one or two birds are affected, they should be removed to separate quarters and fed on warm, nourishing food. A few drops of camphor or a camphor pilule would be of use in the earliest stages and afterwards homœopathic tincture of aconite, two drops every four hours for a day. If the discharge has become thick and the face and eyelids swollen, the nostrils and throat must be cleansed with permanganate of potash solution (pale pink). There are numbers of good "roup cures" on the market, suitable for the treatment of colds in fowl. When a flock of fowl is attacked, some of those cures administered in the drinking water will be found easiest to administer. (*See Roup.*)

Congestion of the Liver. (*See Liver Disease.*)

Cramp. Symptoms: Stiffness of the joints and contraction of the muscles of the feet, a common disease of young chickens, usually caused from damp, from keeping continually on boarded floors or smooth brick or cement floors. A frequent cause of cramp is too much heat in brooders. If boarded or cement floors are used in chicken-houses, they must be covered with dry sand, or earth, or peat-moss. When very young chickens become cramped, there is not much hope of recovery. In the case of older birds, the patients should be kept in a dry house on a warm bed of hay or straw, and the legs rubbed with hartshorn oil and turpentine or some kind of embrocation. Feed the bird on grain, wheat, dari, oats, peas, barley, but not Indian corn, taking care to give grit and plenty of fresh vegetables and a little raw meat every day.

For medicine give cod-liver oil and citrate of iron, 4 grains, to a teaspoonful of the former; Bland's (iron) pills are also very useful.

Crop-binding or Impaction of the Crop. Symptoms: The crop becomes swollen and distended, the bird seems ill at ease and is often seen stretching its neck as if to make room; it appears hungry and yet does not eat much and is constantly drinking. On handling, the crop will be found very full and this fulness will not disappear after fasting. Causes: Overfeeding with grain after a long fast, irregular feeding, stoppage of the passage out of the crop with some indigestible substance such as long hard grass. Treatment: If the bird is merely swollen, give one teaspoonful of Epsom salts in warm water, knead the crop gently and give no food for twelve hours. If the swelling has abated give a small quantity of nourishing food, three times daily, such as bread and milk, or raw egg, but no green food. After a few days, if the swelling remains, an operation will be necessary. Pluck off some feathers from the upper portion of the crop and choose a place where fewest veins appear. With a sharp knife make an incision about 2 inches in the outer skin and then in the skin of the crop; remove all the contents gently with the handle of a teaspoon, introduce the finger, greased, and feel if any substance has become lodged in the passage, then pour in some warm water made aseptic with permanganate of potash and rinse out the crop. Take a needle and thread, which has first been placed in boiling water, or aseptic water, and sew up the incision separately, first the crop, then the outer skin. Rub over a little carbolised vaseline and place the bird in a quiet place and fast it for six hours, then give soft food sparingly, raw egg, bread and milk, &c. In sewing up, let each stitch be separately tied and cut. Feed sparingly and often for a week at least. If skilfully done, there will be very little bleeding or pain.

Crop (soft). Sometimes a bird's crop becomes inflated without being packed with food. This is known as soft crop and is a form of indigestion. The bird should be held with the head down and the contents of the crop evacuated through the mouth carefully, so as not to choke the bird. When the crop is empty, the bird should be fed on soft food of a concentrated and nourishing nature for a few days and not be allowed too much water to drink. If the crop fills up again, the emptying process

must be repeated. Homœopathic tincture of *nux vomica* is useful in this disease.

Crop (inflammation). A serious complaint usually due to some irritant poison. The symptoms are difficulty of breathing and depression. First the crop should be evacuated, then mucilaginous fluids, gum-water, barley-water, milk and isinglass should be freely administered. If phosphorus, often used as rat poison, be the cause, give magnesia, followed by turpentine and cream, but oil should not be given. If lead-poisoning is the cause, give half a teaspoonful of sulphate of magnesia and 5 drops of sulphuric acid in a wineglassful of water. In a few hours 5 grains of iodide of potassium should be given; afterwards feed on mucilaginous liquids. Unslaked lime is a very common cause of poisoning in fowl. In this case, olive oil should be given, followed by mucilaginous drinks.

Debility. Fowls sometimes become thin and wasted without having any actual disease. This is due to anæmia or poverty of blood, and is usually caused by wrong treatment, such as bad insanitary housing and lack of nutrition, or of such necessities as grit and green food. Insect vermin, such as lice and red mites, will, if not checked, soon cause symptoms of debility. Treatment: Ascertain and remove the causes and feed generously, giving daily a little minced raw meat in addition to the other food.

Diarrhœa. Often occurs in a mild form from change of food, or from chill caused by severe weather. Treatment: If possible remove the birds to dry, warm quarters if chill is the cause of the attack, and feed sparingly and often on rice, or oatmeal boiled with milk, and sprinkled with powdered chalk. Medicinally, give each fowl a teaspoonful of olive oil. If the purging is violent and the evacuations are tinged with blood, small doses of chlorodyne will be found effective.

Diphtheria. (*See Roup.*)

Egg-bound. When a hen continually visits the nest without result and walks about with her wings drooping and her tail down, often straining as if making an effort to expel something, she is in all probability "egg-bound" or unable to lay. She should be caught and examined by gently introducing the oiled finger into the cloaca or vent. If the egg can be felt, the inside of the passage should be lubricated with oil or vaseline and the hen returned to the nest, when she will probably succeed in laying. If several hours pass and the bird seems distressed, the egg must be broken and removed, but before doing so, at the time when the bird is making an effort to lay—she will probably be in a standing position—place one hand on each side of the abdomen above the egg and press very gently downwards towards the vent. This will usually have the desired effect, but if it fails, the egg is probably abnormally large and must be removed. An attendant must hold the bird on his knee or on a table, and the operator must sit opposite and with the finger and thumb of the left hand press the egg towards the vent until the end can be seen, then puncture it with a small knife, holding the forefinger along the blade to prevent accidents. Remove the contents with a very small spoon

and then proceed to remove the shell, piece by piece, with a tweezer. When this is done, insert the finger and ascertain if any particles of the shell remain, then syringe the passage with warm water in which a few drops of Condyl's fluid or permanganate of potash solution have been put. Medicinally, give a powder composed of 1 grain of calomel and $\frac{1}{2}$ grain of tartar emetic in a bolus of food. Feed on soft, non-stimulating diet and keep quiet for several days.

Egg broken in Oviduct. When an egg ruptures high up in the oviduct it generally causes peritonitis and ends fatally. The symptoms are somewhat similar to egg-binding, but the bird appears in a far worse case. Very little can be done except to administer the powder prescribed for egg-binding and to keep the patient very quiet. If there is a discharge of broken egg, frequent injections of warm water will help to remove the irritating matter and may save the bird.

Egg-eating. A bad habit often caused by eggs being broken in the nest. Some birds will break and eat eggs if dropped in the run, but will not interfere with them in the nest. The best preventive measure is to give the birds something to occupy them, such as corn buried in litter, and to add animal food to their diet. Some authorities advise filing the point of the beak to the quick and feeding on mash for a time. Lime-rubbish and grit should be given liberally.

Eggs (musty-flavoured, new-laid). Causes: Liver disease, too much strongly tasted food, such as mangold, onions, bad meat, fish, &c., and certain weeds (*see* Liver Disease). Change diet and provide clean nests.

Egg-passage (protrusion of). This is generally the result of over-fatness and much straining to lay. Treatment: Bathe the protruding part with tepid water, or strong tea, and return to its proper position, after anointing with carbolised vaseline. Medicinally, administer the powder advised for egg-binding, to retard laying. In obstinate cases, it is sometimes necessary to place the bird in a sling so arranged that the stern is on a higher incline than the breast and head. A canvas bag will answer with a hole for the head and one for each leg. Keep the bird in this position for about eight hours.

Eggs (soft and abnormal). When a hen lays soft, misshapen or double-yolked eggs, the causes may be want of lime or shell-forming material, shock or fright, over-stimulation, or unhealthy state of the oviduct. An occasional double-yolked or misshapen egg need cause no alarm, but if of frequent occurrence, cooling medicine and less stimulating food should be given and plenty of green food.

Eggs (spots in). Spots of blood are often noticed in new-laid eggs and point to a slight hæmorrhage in the ovary or oviduct according as they appear in the white or yolk respectively. Too much condiment or over-feeding with too stimulating foods will be the cause. Give Epsom salts in the drinking water at first, also plenty of grit and green food. If this fails to cure, add 1 drachm of tincture of iron to each quart of drinking water, using earthen or wooden vessels (*see* Iron Tonic).

Eggs (pale-yolked). Lack of colouring-matter in the blood, usually

due to anæmia consequent on poor or improper feeding and lack of vegetables. Improve the diet and, if possible, give the birds more liberty and a run on grass, or supply fresh green vegetables.

Enteritis (Inflammation of the Bowels). Simple enteritis may be caused by the fowl having partaken of some irritating substance such as unslaked lime, which, by the way, is an irritant poison to fowls and should never be left within their reach. There is a contagious form of fowl enteritis much resembling cholera and often confounded with it. The birds become inert, but not sleepy, and the evacuations are yellow, like thin mustard instead of greenish as in cholera. The treatment would be the same as for cholera, and the same precautionary measures must be taken.

Favus. A formidable poultry disease, treated by some authorities as a severe form of "White Comb," from which it is quite distinct. Favus is caused by a vegetable parasite or fungus, and is known to attack man, dogs, horses, mice, and rabbits. The fungus is called *Achorion Schönleini*. Symptoms: Small white or yellowish scaly spots appear on the comb and face; these little spots are raised at the edges and depressed at the centre like a shallow cup. If neglected, the eruption extends all over the head and down the neck, and in bad cases the birds die from debility. This fungus does not seem capable of attaching itself to sound and healthy flesh, but in an infected yard the least scratch on the comb will probably become affected in a day or two. The most powerful dressing is corrosive sublimate 1 in 1000, but this is a strong poison and all the more dangerous because almost tasteless and colourless. The simplest dressing will be found in one of the mange cures sold for dogs and chiefly made up of sulphur, oil of tar, and train linseed or cocoa-nut oil, applied after softening the diseased surface with vinegar or washing with warm water and soda. (See White Comb.)

Feather-eating. A disease or vice of poultry caused by over-heating food, lack of green food, too close confinement and idleness. When there are feather-eaters in a pen, all or some of the birds will be noticed getting bare and featherless, especially about the heads and necks. Of course bareness at moulting time is to be expected, but when a bird in full glossy plumage shows bare patches, the fowls should be closely and, if possible, secretly observed, when one or several will be seen plucking and eating feathers off their companions, and strange to say the birds attacked appear to enjoy the proceeding. The best treatment will be to change the diet to one of a more cooling nature and give nettle tea for drink. Another excellent remedy is as follows: Put three or four lumps of quicklime, the size of eggs, into an iron pot, slack the lime with boiling water, then stir into the lime about six ounces of sulphur, add gradually two quarts of boiling water, boil gently for an hour and pour off the clear liquid, which will be the colour of dark brandy, and bottle. A teaspoonful may be added to the water for mixing the meal, for every six hours. If the bare places from which the feathers have been plucked are at all sore, they should be bathed with diluted Condyl's fluid or dressed

with carbolic vaseline. If possible, give the birds their liberty, or provide occupation by burying grain in the litter in the scratching shed or house, after rather short rations in the morning, so that they must work all day, scratching for their living, and so forget the bad habit.

Feathers Falling Out. The bird becomes bare in patches from no apparent cause and on examination white scales are found on the surrounding feathers. Causes: Heating food or lack of some necessity. Give plenty of fresh vegetables; make an ointment by boiling some water, adding the same quantity of paraffin oil and one-sixth of the quantity of melted lard. Use this to anoint the affected places, and also dust insect powder through the plumage.

Feathers Stripped of Fluff. When a bird's feathers appear devoid of fluff near the roots and skeleton-like in appearance, it is probably due to the inroads of parasites such as lice. Dust freely with insect powder and observe cleanliness in the houses and fittings.

Fractures (poultry). A fracture of the shank or leg below the thigh is comparatively easy to deal with. An attendant must hold the bird firmly and quietly, while the operator sets and bandages the limb. Take two flat pieces of thin smooth wood a few inches long, wrap each round with a fold of lint or soft linen, and after carefully adjusting the bones in their correct position, bandage first with a narrow linen or tape bandage, and over this with a plaster bandage, which can be obtained at any chemist's and which is softened by dipping in warm water and, when dry, sets perfectly hard and firm. A bird with a fractured limb must be kept in a basket on straw for at least a fortnight. Fractures of the thigh or wing are more difficult to deal with, and unless the bird is valuable it would be better to put an end to it.

Frost-bite. The combs and wattles of fowl are subject to become frost-bitten in very severe weather. When this occurs, the comb first turns pale and livid and afterwards black, and finally the parts affected dry up and drop off. If noticed in time the affected parts should be bathed in *cold* water and then rubbed with vaseline to restore circulation. If this fails to effect a cure and the comb becomes inflamed and sore, the bird should be dubbed, viz., the comb and wattles cut off; except in the case of large-combed birds frost-bite is not likely to prove very serious. To prevent its occurrence in frosty weather, keep the birds' combs well greased.

Gapes. A very fatal chicken pest caused by the presence of red worms in the windpipe, which, if not removed, eventually cause death by suffocation. Chickens contract gapes when about three to eight weeks old, and are seen to open the mouth to the fullest extent and "gape" and cough or sneeze in the endeavour to get rid of the irritation. There are many "Gape Cures" on the market; some are liquids and some in the form of a powder, which is blown in amongst the chickens and when inhaled causes the worms to lose hold on the windpipe. Some authorities recommend putting a pinch of salt into the mouth of each affected bird. To ward off the attacks of this pest, scrupulous cleanliness must be

observed, as the germs remain in the ground, reappearing each year in the affected areas, so that when the disease appears, it is well to avoid putting chickens again on the tainted area, which should be dressed with lime and if possible dug over. Garlic and onions chopped and mixed with the food are good for the chickens and act as a preventive against this disease.

Indigestion. Birds sometimes lose appetite and appear listless and out of sorts, and the breath is usually bad. A mild aperient, such as a dose of Epsom salts, a teaspoonful to an adult bird, and a change of diet will usually effect a cure.

Inflation. Birds, especially young chickens, sometimes become blown out like a balloon owing to the presence of air under the skin. To relieve the patient puncture the skin with a needle or sharp scissors; it will generally fill out again and the puncturing process must be repeated and usually effects a cure. Chickens seldom die of this disease. A useful tonic to give is made by adding 1 grain of citrate of iron and quinine to every two ounces of water, and giving this mixture for drink to the birds.

Inflammation. (*See* Enteritis, Peritonitis, and Crop.)

Leg Weakness. A disease which attacks young birds and is often confounded with cramp. Leg weakness usually occurs in cockerels of the heavy breeds at about four or five months old. The bird is constantly seen sitting down, and sometimes becomes quite unable to walk or is only able to stagger for a few yards and then collapse. If the legs appear normal and not cramped or contracted, rest and nourishing diet will usually effect a cure. Raw meat, green food, plenty of grit and oyster-shell, and good food must be given. Keep the bird in a dry, airy, light house on straw or peat-moss, and as medicine give iron in some form and citrate of iron and quinine tonic in the drinking water. Rubbing the legs daily to promote circulation will be advantageous.

Liver Disease. A very common ailment of poultry which takes various forms. Hypertrophy or enlargement of the liver is caused by too high feeding and by the use of too much maize, and want of shade from the hot sun. It cannot be cured when once established, but can be kept in check by the use of saline aperients and proper feeding.

Congestion is due to similar causes and comes on suddenly. The symptoms are much the same—sluggishness and yellowish evacuations—and, in the later stages, a yellow look about the face and skin and often lameness. In congestion of the liver, a grain of calomel given at the outset will prove useful. Inflammation of the liver is of a more acute nature and is usually caused by a chill. Any good liver pills will be found useful in most forms of liver disease. It is quite possible to cure congestion and inflammation of the liver and to mitigate the symptoms of hypertrophy, but there is one form of liver disease, viz., tuberculosis, which is incurable. Birds affected with tuberculosis should never be used for breeding and should be at once got rid of. In hypertrophy, the liver will be found greatly enlarged, soft, and dark-looking. In tuberculosis, it will be covered with pale spots and,

on being cut into, whitish, hard cheesy tubercles will be seen throughout the tissue, often accompanied by white chalky spots on the surrounding membranes (*see* p. 1009). The symptoms of this disease are loss of appetite, wasting, and thinness, the breast-bone at times becoming almost like a knife, dulness, shrinking and darkness of the comb, difficult breathing followed by weakness and death. The chickens bred from tuberculous parents will often waste away and die at about three months old.

Peritonitis. Inflammation of the lining membrane of the abdomen, sometimes caused by injuries, but more often due to the escape of a ruptured ovum or egg into the abdominal cavity. When a laying hen shows pain and distress, but is not "egg-bound," peritonitis may be feared. Severe cases are hopeless, but those less severe may be treated successfully by perfect quiet and the administration of 5 drops of tincture of hyoscyamus three times daily (*see* Egg-bound).

Pip. A term often applied to any form of illness to which fowls are subject; but usually identified with a horny formation appearing on the tongue. As it seems to be caused by disordered digestion, a change of diet will be the best treatment and the mouth should be touched inside with honey and borax. Another form of this disease sometimes occurs when the tongue gets very hard and sharp at the edges and prevents the bird eating. The sharp scale should be removed if possible and the part dressed with honey and borax.

Pneumonia. Inflammation of the lungs. Symptoms: Difficult breathing, gasping, and panting, the bird spending most of its time lying down. Place the patient in warm quarters and feed on bread and milk. Rub a little turpentine on the skin between the shoulders as a counter-irritant and give one drop of tincture of aconite in a spoonful of water every hour. Later on, give 2 drops of ipecacuanha in water every hour; if there is great weakness, give brandy and egg.

Rattling in the throat or wheezing caused by formation of mucus in the windpipe. This is chronic with some birds, being aggravated more or less at times by wet or cold weather. Keep the bird in a dry airy house, give a teaspoonful of glycerine and water at night for a few nights, and slightly acidulate the drinking water by adding 10 drops of sulphuric acid to a pint of water, taking care to use an earthen vessel. Fat or old fowls and especially old cocks are oftenest subject to this complaint.

Rheumatism is somewhat of the nature of cramp. The joints become enlarged and swollen and hot to the touch. Give the bird Epsom salts and rub the legs with turpentine or embrocation and bandage with flannel. Keep in a dry place and feed on nourishing food.

Roup. A disease of poultry, the early stages of which resemble cold or catarrh. Roup is very contagious and very tedious to cure. In roup the discharge from the nostrils becomes thick and has a very offensive, peculiar smell. The face and eyelids become swollen, white cheesy matter collects under the eyelids, often blinding the bird for a time. The disease assumes many stages and forms, the worst being the diph-

theritic form, when the throat becomes swollen and filled with growths of diphtheritic membrane.

Many good roup cures are offered for sale, but in addition to any of these, it is necessary to keep the bird's mouth and nostrils clean by constant washing and swabbing out with Condy's fluid, or equal parts of peroxide of hydrogen water. When the eyelids are so swollen as to prevent the bird seeing to feed, it will have to be fed by hand. All sick birds must be isolated and kept in a warm dry place, and it is wise to use a disinfectant, such as permanganate of potash, in the drinking water for all birds, to prevent the spread of infection. All the symptoms of roup do not appear in every case, and a flock of birds may develop a kind of chronic roup affection without any deaths ensuing, or the disease may appear and quickly pass into the malignant diphtheritic form, which soon ends fatally unless drastic measures are taken. When the diphtheritic growths appear they must be dressed with hydrogen peroxide put on with a swab made of cotton-wool tied on to a stick. Remove any of the growth which will come off readily, always burning this and the swabs when used. Open the swellings on the face and cleanse them in the same way, but use a solution of boric acid and water for the eyes. Feed on nourishing food, such as bread and milk, and raw egg and raw meat chopped. All houses and runs must be kept very clean and disinfectants used freely.

Scaly Leg. The legs become crusted with a white growth which first appears round the edges of the scales, and, if not checked, forms hard rough crusts shoving the scales up and out of place. The legs should be well washed with hot water and then thoroughly dressed with an antiparasitic lotion, such as any good mange cure advertised. The following is a good dressing: Sulphur, 3 oz.; oil of tar, 1 oz.; linseed or train oil, $\frac{1}{2}$ pint. Another remedy is as follows: Boil together for ten minutes a pint of paraffin oil and a pint of water, add $\frac{1}{2}$ lb. of soft soap and allow it to simmer until thoroughly mixed. The legs should be dressed every day for four or five days in bad cases, and, later, about once a week. Scaly leg is contagious, and if it occurs, the houses and perches should be disinfected. To prevent this disease, it is a good plan to go over all poultry occasionally and give their legs a dressing as recommended above.

Tuberculosis or Consumption. A very common disease of poultry. This disease usually attacks the lungs, but very often the liver (*see* Liver Disease). Too much in-breeding or breeding from diseased birds predisposes to it. When a bird is affected, it wastes away gradually and becomes very emaciated and light. When the lungs are attacked there is difficulty of breathing and cough. The bird is noticed "going light," and after being treated for indigestion, thoroughly dusted with insect powder and liberally fed for some time, shows there is no improvement. The breast-bone feels sharp and knife-like. Tuberculosis is almost certain to be the cause of its failing health. When such a bird is killed and examined, if the whitish gritty spots are found in the lungs or liver or on the

membranes round the abdomen and lining of the thorax, the safest policy will be eradication of any suspected birds.

Vent-Gleet or Cloacitis. Inflammation of the lower portion of the passage in fowl. It commences in a hen, probably from a broken egg or yolk causing septic inflammation, but it can be transmitted to the male bird and hence a whole flock may be infected. The first symptoms are redness and swelling of the parts accompanied by a milky discharge, which, as the disease progresses, becomes offensive and forms yellow crusts inside and round the vent. Treatment: Give 30 grains of Epsom salts and twice a day inject into the vent a strong solution of permanganate of potash and water. In mild cases taken at the outset, this will probably effect a cure. If not, after the fifth day give a small copaiba capsule daily and inject acetate of lead, 1 drachm to the pint. Care should be taken to cleanse and disinfect the hands very thoroughly. All affected birds should be isolated.

Vertigo, or head staggers, an affection of the brain sometimes arising from a blow or injury, or from too high feeding. Give a saline aperient and low diet, and keep the bird quiet in rather a dark place. In cases of injury to the head a bird will often lose the power to pick up food and must then be hand-fed until health is restored. Homœopathic tincture of *nux vomica*, 2 drops three times daily in a little water, is useful in this disease.

White Comb. A scruffy powdery appearance on the comb and face often extending down amongst the features. This disease is contagious but is not at all of so serious a nature as favus, which it resembles. Apply a parasitical lotion to the parts and then dress with cocoa-nut oil, give cooling medicine and allow a plentiful supply of vegetables.

Worms. A variety of these parasites are to be found in fowls. The birds look thin and troubled and worms will be noticed in the droppings. Give each affected adult bird a pill composed of 1 grain of santolin and 7 grains of areca-nut mixed with lard, followed in two hours by a dose of olive oil and a warm mash.

ADVICE CONCERNING POULTRY CONSIGNMENTS

Much of the dead poultry consigned to the London markets is sent without regard to a very simple rule, namely, that from the salesman's point of view it is absolutely necessary all poultry should be fasted (*i.e.*, kept without food or water eighteen hours) before killing; the necks should be broken close to the head, which is undoubtedly the most humane way of dealing with the birds, for the spinal cord is thus severed and all life immediately ceases (the apparent struggle afterwards noticeable being due to muscular reaction). The fowls should be plucked, care being taken not to "bark" the skin; they must then be tied loosely at the hocks. During hot weather the entrails should be drawn out through the vent and a little paper inserted, previously saturated with a weak solution of permanganate of potash. Fowls should be pressed in the

shaping-board or tied down in the Devonshire fashion, remaining there from four to six hours until they have thoroughly cooled. Finally, they should be packed in baskets or hampers, having some straw or paper between each layer. With some little modification this principle applies also to geese, ducks, and turkeys. Market value will be considerably enhanced by attention to proper killing, preparation, and careful packing.

THE AGE OF POULTRY AND BIRDS

The only thing which is of importance in coming to a conclusion concerning the age of the birds which are used for food is to be able to decide whether they are young or old. How young and how old doesn't much matter. Considering first the case of poultry, we may note that in young hens there is only the beginning of the spurs, and the scales of the feet are quite smooth and glistening, while the claws are sharp, pointed, and delicate in structure. The comb, too, is quite smooth and not thick. The beak is fairly soft and can readily be bent with the fingers—a very common test to determine whether a fowl is young or old. Old hens, on the other hand, exhibit rough feet, well-developed hard spurs, a thick rough comb, and a beak so firm and hard as to render it incapable of being bent. It may be remembered that breeds of poultry which have feathered legs also have the spurs shorter than other breeds.

It is much the same in the case of turkeys—a young turkey showing smooth scales on the feet with delicate short claws, the old hens having the feet-scales rough and the claws strong and well developed.

An old turkey-cock can always be distinguished if the feathers are on by the character of a long beard quite absent in young birds. Should the bird have been plucked and the feet remain present, the most ready test for determining the age is the condition of the scale on the feet as well as the size of the comb or wattle. The red fleshy wattle becomes well developed in the turkey-cock until after three months of age, while the feet up to the age of a year are black, becoming red at from two to three years of age and paler as age advances until they become grey.

Ducks and geese have their age determined in a somewhat similar manner. The younger the duck the broader in proportion to the head is the beak. The smooth feet, a delicate beak, and the condition of the skin as regards its thickness, also afford approximate means of estimating the age.

The strong wing and beak testify to an old goose.

It remains to add that in birds, as in other animals, the condition of the skeleton affords certain signs of age, which, however, are not so readily observable as are the points above mentioned. In all young birds the bones are more easily bent in the young, they becoming more readily broken, and finally, as age advances, attain their greatest strength.

THE UTILITY BREEDS OF POULTRY

Name.		Sitters or non-sitters.	Average weight of table cockerel.	Average weight of eggs (per dozen).	Average number of eggs per annum.
			Lb.	Oz.	
Dorking (4 varieties)		Sitters	8-9	27½	120
Indian Game		"	7	24	100
Old English Game (several varieties)		"	4½-5½	24	90
Modern Game (many varieties)		"	6-7	24	85
Plymouth Rock (3 varieties)		"	7½	27	120
Orpington (several varieties)		"	6½-7	27	120
Wyandotte (several varieties)		"	6-6½	25	120
French varieties.	La Flèche	Non-sitters	6½	30	120
	Crève-cœur	"	7	31	120
	Houdan	"	5½	26	125
	Bresse	"	5	33	155
	Faverolles	Sitters	6½	27	115
Mediterranean.	Spanish (2 varieties)	Non-sitters	5	30	75
	Minorca (2 varieties)	"	5½	28	130
	Andalusian	"	5½	28	130
	Leghorn (several varieties)	"	4½	23-27	140-160
	Ancona	"	4½	24	140
Hamburg (6 varieties)		Sitters	4	17-19	170-200
Red Cap		"	5½	20	170-200
Asia-tics.	Brahma (2 varieties)	Sitters	8-9	28½	85
	Langshan	"	8	27	100
	Cochin (5 varieties)	"	8-9	25	80
Scotch Grey		"	6½	29	120
Campines (2 varieties)		Non-sitters	4½	25	150
Scotch Dummies		Sitters	5	No data	100
Cocou de Malines		"			110

THE ORNAMENTAL BREEDS OF POULTRY

Name.		Sitters or non-sitters.	Average weight of cockerel.	Average weight of eggs per dozen.	Average number of eggs per annum.
			Lb.	Oz.	
Malay		Sitters	7	21	80
Aseel		"	5	No data	No data
Polish (6 varieties)		Non-sitters	5-6	23	"
Sultan		"	3	16	"
Silkies		Sitters	3	15	"
Frizzle		"	4	Small	No data
Spanish (2 varieties)		Non-sitters			

(The photographs of the species of poultry reproduced in the foregoing pages are by the Sports and General Illustrations Co.)

CHAPTER III

THE MEAT INDUSTRY IN HUNGARY

THE meat industry in Hungary presents many interesting features which do not exist in other European countries, and as the laws affecting the meat-supply have only been inaugurated within recent date, the result of a personal visit and examination of the meat industry there is of considerable interest.

The following account in the *Meat Trades' Journal* of London, England, briefly describes the main features from the point of view of the meat-trader.

"Some time ago a party of English agricultural writers was invited by his Excellency Mr. Ignatius Daranyi, Minister of Agriculture in Hungary, to visit that country and see its developments, so that they could report through their journals to the English people in how far Hungary had adopted modern ideas in connection with agriculture.

"The party arrived at Budapest on September 14, 1908, and left there on September 27, and during the interval they had the opportunity of seeing the greater part of Hungary. This was no light undertaking, as the kingdom of Hungary covers an area of some 125,430 square miles, or just 4000 square miles larger than that of the United Kingdom. With a strong desire, however, to show the visitors everything possible within such a limited period, the arrangements had been made so that scarcely an hour was lost, and there was something fresh to see all the time."

Budapest's Great Institutions. "The journey began really at Budapest, in examining some of the notable institutions of that great modern city, and extended through Lake Balaton, where the fishery of that great inland sea was duly examined, as well as the beautiful vineyards which surround its shores. On September 17 the party journeyed to Komárom, where they had an opportunity of seeing a large farmers' school, and also a farm conducted by the Minister of Agriculture and which is known as Dunaörs, and where, in the unavoidable absence of his Excellency, the party were sumptuously entertained by his brother. From Dunaörs they went on to Kisbér, where the greatest hospitality was also extended to every one.

"Kisbér is one of a number of State stud farms conducted by the Hungarian Government, and where horses are bred for home requirements and also for export. The various farms are Kisbér, Bábolna, Mezöhegyes, Forgáras, and Palánka. These farms contribute amongst them to a really gigantic horse-breeding industry, which is one of the

greatest resources of agriculture in the country, and which may be judged from the fact that horses to the value of £1,166,000 sterling, or thereby, are exported every year.

"The cattle of the country present quite different types from those in Western Europe, and the long-horned Hungarian breed is of quite peculiar interest. These cattle are, for the most part, used for draught oxen, as it is quite an unusual thing to use horses for draught purposes. Of late years there has been an attempt made to foster the breed of heavy horses for work on the farms, but very little impression has been made upon the numbers of cattle used for work. The cattle in the country are divided up into the native Hungarian and imported breeds, and the latter consist of Simmenthaler, Pinzgauer, and Algauer breeds, all of Swiss origin, and they are principally to be found in the elevated and mountainous districts; whereas the white Hungarian cattle are generally found in the Great Hungarian Plain. Hungarian cattle form 22 per cent. of the total numbers in the country, and the others mentioned amount to 78 per cent."

The Great Hungarian Plain. "The object in view in cultivating the Swiss breeds is, of course, the production of milk and butter. Unfortunately, however, the production of butter has been sadly neglected in Hungary, and the business is only now being formed into a definite industry by itself. It is quite possible that in a few years' time Hungary may become, as it is entitled to, a very large export butter area.

"The Great Hungarian Plain, which is right in the centre of the country and occupies one-third of its total area, is one continuously level surface, and is devoted to various systems of agriculture, but the fact that long droughts are common has an extremely deterring effect upon agricultural progress. On the hills all round about the plain, and which form a kind of fringe on the frontier of the country, wine-growing is conducted to an enormous extent—so much so, indeed, that it forms the staple industry of the mountainous districts."

Crops and Swine. "Of crops, the principal is that of wheat, which forms 30.61 per cent. of the total agricultural yield. Next to that is maize, which forms 21.57 per cent., and next again is that of oats, forming 9.00 per cent. Agricultural products, such as barley, potatoes, tobacco, and other crops, are not cultivated to any great extent.

"The number of swine in this country is returned at about 5,000,000, and these, for the most part, consist of the Mangalicza breed, and which is only one step removed from the wild boar. The Mangalicza pig is a coarse, long-haired, ungainly looking animal, and contains about five inches of fat along the back, so that for ordinary purposes to which pigs are put, namely, for bacon-curing, this breed is of very little use. It appears, however, that the fat is largely used to replace butter in Hungary, and in consequence the perpetuation of this race of swine continues. A year or two ago the Department of Agriculture introduced some 1200 pigs from England into the country, and these were mostly of the

Yorkshire breed. These English pigs have been distributed in various parts of the country, and the results are visible in some districts already. It is hoped that this is only a beginning of an alteration in the breed of pigs, which will ultimately result in their character being entirely changed, and should this be accomplished there is very little doubt but that Hungary will become a bacon-curing country, as it seems specially adapted to the growing of pigs."

The Markets and Abattoirs at Budapest. "The capital of Hungary is Budapest, and naturally one would expect to find there the most up-to-date markets and abattoirs, and it may be said at once that in these matters Hungary is second to no other country. The markets and abattoirs of Budapest are modern institutions, and they are designed on quite modern lines. In the markets it is noticeable that the cuts of meat are entirely different from any obtained in Western Europe. It is also noticeable that quantities of pork are on sale which is not Hungarian at all, but which, we find, comes on a long journey from Servia. It is rather remarkable that this pork arrives in first-class condition, and this is due to the fact that it is conveyed in railway waggons fitted as refrigerator cars. The meat itself registers 42° Fahr., and, of course, at that temperature would keep for a much longer period than seven days. The average price of the whole carcase of a pig, weighing net 280 lb., is 5*d.* a lb., so that it cannot be looked upon as being very cheap. Beef and veal are sold at about the same prices as are realised in Smithfield Market.

"One of the places of interest visited by the party in Budapest was the abattoirs. These are located just outside the city and are three in number, consisting of the pig abattoir, the horse abattoir, and the cattle and small animals abattoir, and, along with the cattle markets, are all enclosed in an area of 50 acres set aside for the purpose. In the pig abattoir the number of animals to be handled per day seems to average about 1000, and all those that were passed for slaughter on the occasion of our visit belonged to the Mangalicza breed. As they are brought into the abattoir yards they are stamped with a number, which not only shows on the hair but is also punctured on to the skin by the number being formed of a number of needle-points. These points are, along with the surrounding stamp, pressed upon a pad containing violet marking-ink, and the impression is made on each animal as it passes—the number used being that of the owner. By this means he can trace his pigs right through the abattoir, as the impression on the skin remains."

An Interesting System of Co-operation. "All the pigs were very heavy, and the average weight would be 20 stone, or about 280 lb. dead weight. The slaughtering is not quite so humanely carried out as one would wish, the animals not being stunned, as is now common in most up-to-date abattoirs, nor are they hoisted up to a track-bar to be bled. In so far as the furnishing of the abattoir is concerned, the methods of handling the pigs are pretty much in conformity with our own ideas,

the cooling and handling being similar to what we are used to. The cutting up, however, was totally different, and this was due partly to the large blocks of fat which were cut off from each carcase, and which were handled in large pieces. It appears that great numbers of these pieces are salted, there being quite a demand for salted fat. The curing of the meat takes place in the abattoir, and the wet process is the one carried out, but as curing is entirely a primitive matter in Hungary, it would not compare with the methods of nations which have specialised this department of agriculture. It is noticeable that the number of condemned carcasses amounted only to $1\frac{1}{2}$ per cent. of the whole, and these were paid for out of a common insurance fund, to which every slaughterer of pigs contributes 10d. a pig. The handling of the residues is conducted by a society composed of the pork-purveyors of Budapest, and they charge for every pig that is slaughtered the sum of 1s. 8d., and retain the offals entirely. At the end of the financial year the profits derived from the offals are divided *pro rata*, and as a consequence the business is conducted in a very satisfactory way to all concerned. It is a system of co-operation which is well worth imitating.

"In the horse abattoir some 5000 horses are handled every year, but these are not specially bred for the purpose of food. The horses are those which have to be destroyed for some fault, and the flesh is sold to poorer people in various forms.

"The cattle abattoir is a combination of the booth system and the large hall, so that each slaughterer may have a room for himself if he prefers it, and cares to pay for it. The handling of the carcasses, however, is practically the same as in other countries with this exception, that the animals are not stunned, and this particular feature of the business did not commend itself to any of the visitors. The same system of insurance pertains in all the abattoirs, and each animal has to contribute to the common fund."

Complete Method of Meat Inspection. "The cattle mostly seen in the abattoirs were those of the Hungarian breed, and it appeared that they were drawn from the plains after having been draught oxen for some years—there was no rule as to age. They were tall and coarse-looking animals, and range from sixteen to seventeen hands high at the shoulder. The live weight of many is about 28 to 30 cwt.! It will therefore be seen that the proportions of weight and size are far beyond anything we are familiar with.

"The system of meat inspection is very complete, there being veterinary officers at the abattoirs who not only inspect the animals alive but pass the carcasses after they are slaughtered. The same system obtains throughout the whole of Hungary as in Budapest. It appears that every community which has a demand for a large quantity of meat is compelled to erect a slaughterhouse in conformity with certain sanitary and veterinary requirements. As a consequence, up-to-date abattoirs exist throughout the whole country, and these are under the inspection of qualified veterinary officers. Lately there has been a movement to

carry the business of abattoir reform a step further, and in some places an apparatus has been erected for the utilisation of the condemned carcasses, so that what is absolutely offensive may be reduced to an innocuous powder within the abattoir gates, and what may be sold freely in the cooked condition is also placed at the disposal of the poorer portion of the public." *

Amongst the European nations really remarkable progress has been made in the empire of Hungary in connection with the Meat Industry. The cattle of the country are divided up into the native Hungarian and imported breeds, the latter of which consist of Seminthaler, Pinzgauer, and Algauer breeds, all of them being of Swiss origin. The Swiss cattle, however, are intended primarily for milk purposes, whereas the huge Hungarian native animals are used in the first instance as draught animals on the farm, after which they are used in the Meat Industry. The Hungarian breeds are principally found in the Great Hungarian Plain, which occupies the centre of the country, and they form 22 per cent. of the total number of cattle in Hungary.

Notable also amongst the live-stock in Hungary are the Mangalicza breed of swine, the number of which is about 5,000,000. The peculiar characteristic of this animal is that it has long hair somewhat after the fashion of the Lincolnshire or old Gloucester breeds of swine, but in other respects the Mangalicza breed is totally different. The fat of the back is about five inches thick, so that for bacon-curing purposes this breed is entirely useless; it is, however, of great value in Hungary inasmuch as the fat is used largely in place of butter. Attempts are being made, however, to replace the native breed with imported English breeds, and a few years ago 12,000 of such animals were imported into the country and distributed over different centres.

The Capital and its Markets. The capital of Hungary is Budapest, which is picturesquely situated on the Danube, and among the leading features of the city are its markets and abattoirs, which, as modern institutions, are second to none in Europe. The markets are in the centre of the city and contain stalls in which all kinds of merchandise is offered, and more especially are the meat stalls of considerable interest owing to the fact that the various cuts of meat are so totally different from what may be found in any other capital of Europe.

The abattoirs are located outside of the city and are three in number, consisting of pig abattoir, horse abattoir, and cattle and small animals abattoir, and they occupy an area of some 50 acres. In the pig abattoir the number of animals handled is about 1000 per day, which indicates that there is a considerable sale of pig products in the capital city of Hungary. The weights of these animals average about 280 lb. each dead weight, and the slaughtering is conducted by a society which also takes possession of the offal and returns to the members a division of the income derived from this source at the end of every twelve months.

* We are indebted to the editor of the *Meat Trades Journal* for the use of the following illustrations.

The handling of the carcasses of the various live-stock is practically the same as obtains in other European countries, the modification not being worth any particular notice. It is remarkable, however, that the Hungarian cattle, which may be seen in large numbers in these abattoirs, are of huge dimensions and range from 16 to 17 hands high at the shoulders, their live weight being anything from 28 to 30 cwt. Recently much attention has been given to meat control in the country, and, as a consequence, a decree has been published which regulates the conduct of abattoirs throughout Hungary, and clearly lays down the duty of meat inspectors, so that there may be complete supervision of all kinds of meat products in the public interest. As this decree is a model of its kind, a summary of it is given in the following pages.

The decree consists of several chapters.

CHAPTER I. treats of public abattoirs and enunciates the principle that each village should be obliged to erect an abattoir, if the income would be sufficient, relatively to the number of animals killed, to redeem the expenses of construction and maintenance.

The small villages may associate for the construction of a common abattoir.

The slaughter of uncloven-footed animals may only take place in a special abattoir, which must be situated on an area attached to the public abattoir.

If a public abattoir is already in existence, the slaughter of all animals intended for public consumption can only take place in that establishment, except in such cases where immediate slaughter is urgently necessary.

The decree prescribes that in the towns all animals destined for public consumption may only be killed in the public abattoirs and that in case the abattoir lacks the necessary equipments for slaughter of all kinds of animals the establishment shall be either enlarged and provided with the necessary premises or be entirely reconstructed. These works must be executed within five years from the coming into force (August 1, 1908) of this decree.

The premises of the public abattoirs must be, as far as possible, situated in the neighbourhood of rivers provided with abundance of water; in the contrary case they must always be provided with water in sufficient quantity—wells or water-mains—and a suitable canalisation.

In the villages where neither public nor private abattoir exists, the municipal council, after having conferred with the competent State or communal veterinary surgeon, shall indicate a suitable place for the slaughter of the animals.

This place must be paved with brick or stone and enclosed, and besides this must be thoroughly cleaned after each use.

CHAPTER II. treats of meat inspectors. It prescribes that the inspection of meat and animals shall be exclusively at the charge of the community. Consequently the communities (villages) are obliged to pay meat inspectors and to take care that they shall be replaced in case of absence.



BUDAPEST GENERAL ABATTOIRS. PERSPECTIVE VIEW

The Budapest cattle and sheep abattoirs are surrounded by cattle markets, so that the animals can be conveniently inspected when alive as well as in the carcase. There are two other large abattoirs in the city; one is used for pigs alone and the other for horses.

In the first instance, only veterinary surgeons can be nominated as meat inspectors ; if there is not a veterinary surgeon in the place, the doctor is chosen, and in default of both veterinary surgeon and doctor, the community is obliged to pay a meat inspector, who is to be instructed as this ordinance prescribes.

In case such an inspector cannot be obtained, the village or villages associated for the construction of an abattoir must, within two years from the coming into force of this decree, instruct and pay a person nominated for this purpose.

This same chapter treats also of reinspection.

If the owner of the animal does not accept the decision of the meat inspector, a reinspection can be made :

(a) At Budapest by a competent professor of the veterinary college, pending the nomination of the position of veterinary-in-chief of the metropolis ;

(b) In the other towns or villages the work of the communal veterinary surgeon shall be controlled by the competent veterinary inspector of the State. The reinspection shall be assured by the county State veterinary surgeon.

In the case where the reinspection contradicts the opinion of the inspector, the expenses must be paid by the community ; in the other case these expenses shall be paid by the interested parties.

To ensure the efficient training of laymen-inspectors, the veterinary surgeons of these abattoirs of sufficiently great importance, which possess the necessary equipments, will organise courses of instruction of one month duration. The maximum number of pupils shall be twenty.

These abattoirs will be nominated as schools of instruction by the Ministry of Agriculture.

CHAPTER III. treats of the *ante-mortem* inspection of animals. It regulates slaughter in cases of urgency, distinguishes public from private consumption, and determines the length of time which the animals must rest before slaughter.

The slaughter of animals is treated in CHAPTER IV. Except in the cases of urgency-slaughter and of Jewish ritual slaughter, the animals must be stunned before the blood is let out. Slaughter must take place during the day by natural light, but in cases of ritual slaughter the municipality can authorise nocturnal slaughter if the lighting necessary for a thorough examination is assured.

Horses can only be slaughtered in presence of a veterinary surgeon.

Slaughter is forbidden if the animal is affected with :

(a) Anthrax, gangrene emphysematosa, œdema maligna, hæmorrhagic septicæmia, rabies, mucus, berbene dei buffali (epidemic of buffaloes), red murrain (except for animals suspected of red murrain or suspected with being infected with it), peste bovine, tetanus, or a suspicion of one of these diseases.

(b) Sucking-pigs, lambs, kids, less than four weeks old.

(c) Females in a condition of advanced pregnancy.

(d) Females within eight days of having given birth to young.

In cases of urgency-slaughter no account is taken of prohibitions (c) and (d).

In cases when calves less than four weeks old but more than eight days are slaughtered from necessity, their flesh shall only be sold for public consumption in the official butcher shops (Freibank).

In cases of the diseases mentioned in section (a) of the preceding,



HUNGARIAN OX

The most remarkable feature of the agriculture of Hungary is the Hungarian ox, which is used on the Great Hungarian Plain as a draught animal, and may be seen in the fields in teams of two, four, and six. The Hungarian ox has huge horns, and stands much higher than British cattle. After being used on the farm, the oxen are slaughtered for beef.

section the veterinary inspector alone may operate ; in the other cases the layman-inspector has also the right of intervention.

If the inspector is not a veterinary, he may only permit slaughter when he does not observe any symptoms of disease or when the animal only exhibits some insignificant symptoms which do not affect its general state of health.

CHAPTER V. regulates the inspection of meat and organs of slaughtered animals. It is necessary to inspect with great attention

(1) The blood.

(2) The lymphatic glands of the head, of the upper part of the neck and region of the throat ; the mucous membranes of the tongue, mouth, and throat.

(3) The lymphatic pulmonary, bronchial, and mediastinal glands (cross-section in the lower third of the lungs).

(4) The pericardium and heart (longitudinal cut, opening the two chambers of the heart and dividing their septum in two parts).

(5) The diaphragm.

(6) The liver and its lymphatic glands.

(7) The stomach, intestines, the mesenterium, their lymphatic glands as well as the fat adhering to them.

(8) The spleen.

(9) The kidneys and their lymphatic glands and the bladder.

(10) The uterus, the vagina, and the vulva chiefly with animals which have given birth to young shortly before slaughter, where a vaginal flux has been observed and also when lesions are visible on the external surface of the uterus.

(11) The udder and its lymphatic glands.

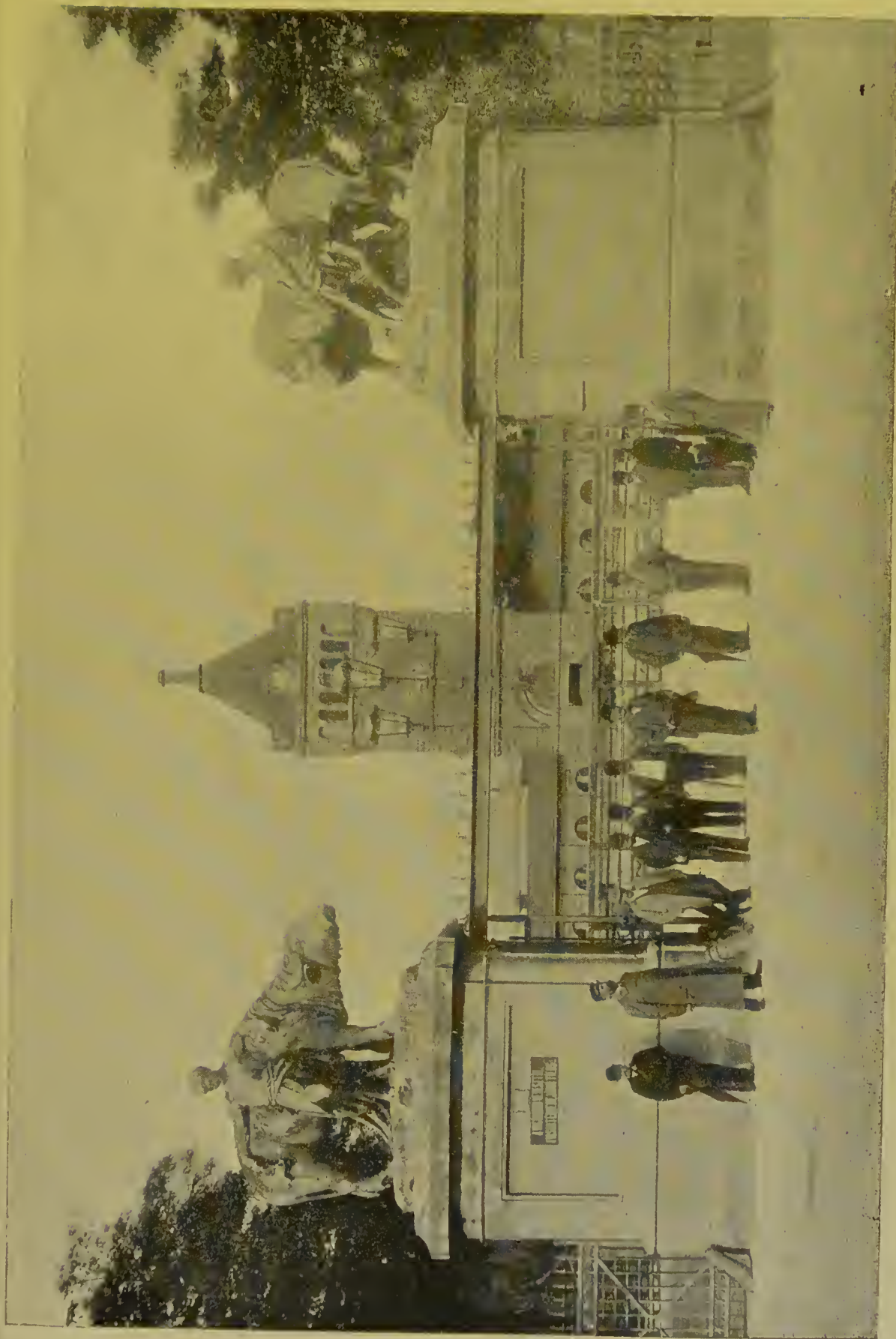
(12) The muscles, the conjunctive tissue and the fatty tissues adhering to the bone ; the joints, the pleura and peritoneum.

In suspected cases it is also necessary to inspect the lymphatic glands at the entrance of the breast as well as the following lymphatic glands : præscapularis, ileo-lumbalis, coccygis, poplitellis, cruralis, lumbalis, sub-brachialis, and sternalis.

In horned animals it is necessary to seek for tape-worm cysts by examining the tongue, the heart, the interior masticating muscles (a deep incision must be made in this latter parallel to the jaw), as well as the visible parts of these pieces cut for sale.

If there is a suspicion of distomatosis hepatis, it is necessary to make a longitudinal incision to the superficial part of the liver, towards the stomach and the principal biliary duct, as well as a transverse cut near the lobus Spiegelii. The kidneys must be taken out of the enveloping fat.

In the case of calves the navel and the joints must be examined, and in suspected cases these parts are to be cut open. The control of the tape-worm cysts must be carried out just as for the larger animals ; but if the calf is less than six weeks, this control can be renounced. The inspection of the head and its lymphatic glands, if it is not necessary to



GENERAL ABATTOIR, BUDAPEST. MAIN ENTRANCE

Budapest possesses one of the most modern abattoirs in Europe for the handling of cattle and sheep, and the architecture is not the least remarkable feature of the building.

seek for cysts, and also the inspection and extraction of the thoracic organs and of the kidneys, can be neglected in the case of calves if there is not any suspicion of disease.

The pigs, except sucking-pigs and small pigs under twenty kilos, must be divided into two parts by cleaving the vertebral column and head, and the fat must be taken away.

The muscular parts which have been laid bare, especially the muscles of the overleg and belly, the diaphragm, the muscles between ribs and those of the neck, the heart, the tongue, and the epiglottis, must be inspected for tape-worm. If one can be assured that without doubt no cysts exist, the cleaving of the vertebral column and head can be neglected.

Sheep's and goats' livers must always be inspected.

For lambs and kids it is not necessary to take out and inspect the thoracic organs except in case any disease is suspected.

The entire carcase (the meat with the bones, the fat, the viscera), the skin and the blood) is unfit for public consumption if the animal is found to be infected with: anthrax, gangrenous emphysema, septicæmia, mucus, bovine peste, pyæmia (consequent upon suppurating wounds, metritis, mammitis, synovitis, omphalo-phlebitis, pneumonia, pericarditis, or enteritis); tuberculosis, when the animal is very emaciated by the disease; red murrain; hog cholera and swine plague (if great emaciation or signs of the generalisation of the disease is found); tetanus; icterus (if every part of the body still retains after twenty-four hours an intense yellow or yellowish green colour, or if the animals are emaciated); the cysts, if the meat is hydræmic, discoloured, and if it has also become gelatinous; accentuated generalised dropsy; tumours, if they are numerous in the flesh of the muscles, in the bones, or in the intermuscular lymphatic glands; strong sexual odour or uræmia; repugnant odour in the meat caused by drugs or disinfectants; if this odour persists after the test of cooking and cooling; the extreme emaciation of the animal consequent upon disease; advanced state of putrefaction or of analogous decomposition; dourine, if the animal is very emaciated by the disease.

The whole carcase is equally unfit for public consumption if the animal has died a natural death, or if it has been slaughtered while in a dying condition, agonia, if still-born or unborn.

In cases of anthrax, gangrenosa emphysematosa, rabies, mucus, bovine peste, red murrain, hog cholera, barbone, the skin must be destroyed conformable to the ordinances in force, in other cases the skin may be employed for industrial purposes.

The entire carcase is unfit for public consumption, but the fat may be utilised conditionally, if the animal is affected by one of the following diseases:

(1) **Tuberculosis**, even without great emaciation, if there are signs of a recent infection of the blood, not limited only to the viscera and the udder.

(2) **Tape-worm cysts** (*Cysticercus inermis* of cattle and *Cysticercus cellulosæ* of hogs, sheep, and goats), if the meat is hydræmic or dis-

coloured, or if the parasites, living or dead, appear in relatively great numbers on a surface of the size of the palm of the hand, and above all in those incisions which are the favourite resorts of the cysts.

The intestines not affected with cysts may be allowed into free circulation, if there is no other affection.

(3) **The Miescher Corpuscles**, if the parasites are found in relatively great number in the muscles, and if from this fact the meat has become hydræmic or remarkably discoloured.

(4) **Trichinosis**, if the parasites are found in more than eight microscopic preparations out of twenty-four.

In all these cases skins may be freely used in industry.

WHEN UNFIT FOR PUBLIC CONSUMPTION

Only the affected part of the carcasses is unfit for public consumption if one of the following affections is found :

(1) The cysticercosis of cattle, where only one cyst has been found in the meat, cut in pieces weighing about $2\frac{1}{2}$ kilos.

(2) The presence of parasites in the viscera, distomata, tape-worm cysts, echinococcus, cœnurus, &c., except in the cases mentioned in the preceding section, if from the number or distribution of the parasites it is impossible to remove them and therefore it becomes necessary to destroy the organ entirely, otherwise after having cut off the parasitic part, the organs can be allowed for public consumption. Organs containing cysts unhealthy for man must in every case be destroyed.

(3) Limited abscesses.

(4) Infectious peripneumonia, if the animal is not emaciated.

(5) Tuberculosis of viscera, except in case of acute emaciation, and when indications exist of a recent infection of the blood, or if the tuberculosis extends to several organs, even without acute emaciation. An organ must be declared tuberculous even when tubercles are found only in the glands of that organ. Exception : in case of tuberculosis of the mesenteric glands ; the heart ; only the thin or the thick intestine can be made exception of, if tuberculous lesions are found in one or the other part of the intestines.

(6) The actinomycosis or the botriomycosis.

(7) The foot-and-mouth disease without complications ; in this case one should only destroy the parts affected, extremities of the feet, mouth, lips, tongue, &c.

(8) Other inflammatory affections not mentioned here.

(9) Injuries and wounds, bruises, fractures, burns, &c., if without fever.

(10) The hog cholera without great emaciation, and if no signs exist of a generalised disease.

(11) Development abnormalities if not associated with troubles in nutrition, nor with change of the quality of the meat.

(12) Atrophy of organs or muscles.

(13) Blood or water infiltrations, the calcium or pigment deposits in certain organs or certain parts of the body.

(14) The superficial decomposition, mouldy fermentations in certain parts of the body.

(15) The contamination of the meat by suppurating or inflammatory products.

(16) The introduction into the lungs or blood or stomach-contents of the hot water used for cleansing purposes or of other impurities.

(17) Alteration of meat caused by injection of wind, or the introduction of impurities, making thorough cleaning impossible.

The testicles, vagina, and the uterus must be destroyed even if they be found healthy.

FOR PUBLIC CONSUMPTION: UNDER CONDITIONS

The following must be recognised as proper for public consumption *under conditions*:

(A) The fat in the cases of sect. 76.

(B) The entire carcase except the pieces declared unsuitable in the cases of sect. 77, if they are found to be affected as follows:

(1) Tuberculosis extending to several organs, without great emaciation and (a) if a recent infection of the blood is found, limited only to the entrails or to the udder; (b) or if the tuberculous lesions are found not only in the entrails and udder, but also in other parts; (c) or extended suppurating centres; (d) if the disease is very extended in the deformed entrails and if in the cases (b), (c), and (d) signs of recent infection of the blood are not found.

(2) Hog cholera, if signs of great emaciation or of a generalised serious disease are not found.

(3) Cysts unhealthy for man: (a) in horned cattle, provided that the prescriptions of the sects. 75 (14) and 77 (1) are not to be employed; (b) in pigs, sheep, and goats, provided that prescriptions of sects. 75 (14) and 76 (2) are not to be employed, even in the case where there exists not more than one cyst.

The livers, the spleens, kidneys, stomachs, and entrails of animals recognised as attacked with cysts, as well as the fat of cattle infected with cysts, must be declared suitable for consumption, if they are found without cysts.

The bacon and fat of pigs found with one single cyst, and also the bacon and fat of pigs slightly infested with cysts, if this bacon and fat contain only a small number of cysts, the presence of which does not alter them, must be detached in presence of a veterinary surgeon, then entirely melted, after having been cut into small pieces.

The fat so produced may freely pass into free circulation.

(4) The trichinosis, if the presence of trichinas is proved in less than eight out of twenty-four microscopic preparations.

Meat declared conditionally suitable for human consumption becomes fit for alimentation if treated in the following manner :

(1) The fat, if melted, in cases of sec. 76.

(2) The meat : (a) if cooked or sterilised, if it is a question of tuberculosis in the cases of B (1) of sect. 78 ; (b) if cooked, sterilised, or salted ; if it is a question of hog cholera, in the cases of B (2) sect. 78 (2) by pigs, sheep, and goats infected with cysts in the cases of B (3) (b) of sect. 78 ; (c) by cooking, sterilising, salting, or cooling with cattle infected with cysts, in the cases of B (3) of sect. 78, with the restriction mentioned there.

The fat must, in all cases mentioned above, be submitted to a melting process and not to cooking or salting.

In order to render meat or fat fit for human consumption, the following prescriptions must be observed :

The fat must be melted at a temperature of at least 100° C.

Treatment of Parasitic Meat. The parasitic meat must be boiled until the bovine meat takes a grey colour even in the most central parts, and in case of pork till it becomes greyish white in colour. Meat invaded by bacteria must be cut in pieces of a maximum thickness of fifteen centimetres and must be cooked in boiling water for at least 2½ hours.

The sterilisation in steam apparatus shall be recognised as sufficient only in the case when it is proved that even the most central parts of the meat have been exposed for ten minutes to a temperature of 80° C. or if the meat, which has been cut into pieces of maximum thickness of fifteen centimetres, has been sterilised for at least two hours at a pressure of half an atmosphere. The cooking must be regarded as finished when the bovine meat has become grey in colour, and pork greyish white, in the most central regions, and if the juice from incisions has ceased to be reddish.

For salting, the meat must be cut into pieces, weighing at least 2½ kilos, these pieces are well covered with salt or put into a brine containing at least 25 per cent. of salt. This salting lasts at least three weeks. If the salting is done by injection, it is enough to leave the meat fourteen days under administrative control.

Cysts in cattle meat can also be destroyed by cold. In employing this process, the meat must be left for twenty-one days in a cooler, where such conditions must obtain as shall ensure the meat shall remain there in a state of perfect conservation.

Declaration of inferior quality is to be made in the cases of :

(1) Particular smells or tastes in animals nourished from fish ; further light modifications of taste and smell and similar deviations with respect to colour, composition, and conservation, for example : superficial decomposition, moderately disagreeable odour or urine, sexual odour, odour due to medicaments, disinfectants, &c., moderate hydræmia, moderate yellow colorisation consequent upon icterus, hæmorrhage limited in extent, the corpuscles of Miescher, or lime deposits.

(2) Accentuated emaciation if it is not consequent upon a disease.

(3) Immaturity or insufficient development in calves and lambs.

(4) Insufficient bleeding, notably in the case of animals urgently slaughtered, if no other lesions exist, necessitating inspection of the meat.

The sale of meats mentioned in 1 to 4 of this section is only permitted in the official butcher shops.

The Power of the Inspector. Suspected meat must be provisionally seized by the inspector, who is obliged to immediately inform the proprietor or his representative and also the veterinary authorities of this fact.

The stamping of meat must be done in blue ink, if the inspector is a veterinary surgeon: in other cases with black ink. The stamp must indicate the name of the community and the date of inspection.

Meat unsuitable for consumption must not be stamped.

Condemned meat must be destroyed by prolonged cooking or by chemical process. Products thus obtained may be used for industrial purposes or be buried; in this case very deep incisions must be made in the meat, and it must be denaturalised with creosol, carbolic acid, &c. The buried meat must be put into the soil to a depth of at least one metre.

CHAPTER VIII. is taken up with the official butcher shops. It prescribes that in each town or community, where animal slaughtering is important, premises depending as much as possible on the slaughterhouse shall be erected at the public expense for the sale of the meat of inferior quality.

The decree also enumerates matters of instruction of non-veterinary inspectors. At the end it contains a table of the different forms of tuberculosis and the description of the different cases of total and partial condemnation as well as the table of the different meat stamps.

CHAPTER IV

CONTROL OF THE EXPORT OF MEAT FROM DENMARK

Translations of the Laws and Regulations in force from December 15, 1908

LAW NO. 245 CONCERNING THE CONTROL OF THE EXPORT OF MEAT, &C., MAY 27, 1908

Sect. 1. The Minister of Agriculture shall be authorised to take the necessary steps to prevent meat, by-products from slaughterhouses and manufactured products of meat of horses, cattle, sheep, goats, and swine being exported from Denmark when tainted or derived from animals which are suffering from any disease making the meat unfit for human food or which are so emaciated that the meat cannot be considered fit for that purpose.

By Royal decree marks may be prescribed which may be required to be applied to meat and offal (by-products from slaughterhouses) of horses, cattle, sheep, goats, and swine which, being of Danish origin, are exported from Denmark. Regulations governing the use of such marks as well as the control of the slaughterhouses, &c., shall be issued by the Minister of Agriculture. It shall be forbidden to make in Denmark or to import into Denmark without the sanction of the said Minister, copies or duplicates of the marks prescribed as well as the stamps, printing blocks, &c., required for the production of such marks.

The Minister of Agriculture shall be authorised to forbid the use of such preservatives in the said kind of products as might be considered prejudicial to the export, and generally to lay down such regulations as may be conducive to the export of the said goods.

Sect. 2. Meat and offal which, by the officers of the service instituted to control the export according to this Law, shall be found unfit for human food shall, under the necessary control and in accordance with special rules laid down by the Minister of Agriculture, be rendered unserviceable for such purpose.

Lard and tallow, produced from meat and offal of diseased animals for which no veterinary certificate shall be produced as to their fitness for human food, as well as of dead (not slaughtered) animals, and of animals condemned by one of the officers of a public meat-controlling service, must be sold only for technical purposes. The seller as well as the buyer must keep a register showing the sale of such lard and tallow, according to the directions of the Minister of Agriculture.

The inspectors, appointed by the Minister of Agriculture to supervise

the control of the meat export, shall have free access for the purpose of inspecting such registers.

Sect. 3. It shall be prohibited to offer for sale or to dispose of in Denmark or to export from Denmark meat or offal of dead (not slaughtered) horses, cattle, sheep, goats, and swine in any condition whatever, which would allow them to be used for human food. The sale of meat or offal of dead (not slaughtered) animals of the above-named kinds for other purposes than human food shall not be permitted unless the owner by a declaration in writing or by other means shall have obtained from the receiver evidence proving that the person to whom he sells or transfers the goods has been made acquainted with the fact that the goods are not fit for human food.

Sect. 4. Meat and offal of horses, cattle, sheep, goats, and swine which before slaughter shall prove to be diseased or which after slaughter shall prove to be seriously affected by disease must not be offered for sale or disposed of in Denmark or exported from Denmark in any condition whatever which would allow them to be used for human food, unless an authorised veterinary surgeon, according to regulations issued by the Minister of Agriculture, shall certify that such meat and offal are fit for human food. In the absence of such certificate the sale of such meat and offal for other purposes than human food shall not be permitted unless the owner by a declaration in writing or by other means shall have obtained from the receiver evidence proving that the person to whom he sells or transfers the goods has been made acquainted with the fact that the goods are not fit for human food.

When the controlling veterinary surgeon shall find in the carcase of an animal evidence of disease he shall continue his examination so far as he may deem necessary in order to decide the way in which the meat and offal may be disposed of, even if the owner of the animal shall declare his intention to sell it in Denmark.

Sect. 5. The terms Meat and Offal (by-products from slaughter-houses) shall apply to all edible parts of the animals mentioned in this Law, with such exceptions as may be fixed by the Minister of Agriculture.

Sect. 6. Infringements of the provisions of this Law or of the regulations issued in connection with this Law shall, if the nature of the offence does not bring it within provisions calling for more severe punishment, be punishable with fines from 50 to 2000 Kr. (£2 10s. to £111), which shall accrue to the State Treasury, the meat products in question being at the same time confiscated.

The police shall cause the confiscated meat products to be made unserviceable for human food.

In case of a second or subsequent offence the amount of the fine shall be doubled, and under aggravating circumstances a term of imprisonment may be inflicted, in which case the sentence shall be published by the police.

In case it be proved that a person has been taken ill by eating unwholesome meat or offal, whoever has sold such unwholesome food in





contravention of the provisions of this Law may be sentenced to pay the sufferer such compensation as may be fixed by the Court for the loss caused to him in consequence of such illness, provided the sufferer in the course of the prosecution by the police shall apply for such compensation.

Prosecutions for infringements of the present Law shall be dealt with as public police cases.

Sect. 7. The provision in *Sect. 5*, second paragraph, of Law No. 64 of March 30, 1906, concerning the trade in and the import and export of agricultural produce is hereby repealed.

Sect. 8. This Law, which takes the place of the Law of April 24, 1903, concerning the control of the export of fresh and slightly salted meat, &c., shall come into force four weeks after its publication in the Official Law Gazette.

Amalienborg, May 27, 1908.

Frederik R.

(L.S.).

Ole Hansen.

ROYAL DECREE CONCERNING THE MARKING OF MEAT AND OFFAL OF HORSES, CATTLE, SHEEP, GOATS, AND SWINE OF DANISH ORIGIN EXPORTED FROM DENMARK

According to *sect. 1* of the Law of May 27, 1908, concerning the control of the export of meat, &c. We hereby make the following decree :

Sect. 1. The following stamps, with the number of the respective slaughterhouse, hall, according to regulations issued by Our Minister of Agriculture, be used for meat and offal of horses, cattle, sheep, goats, and swine slaughtered at the slaughterhouses authorised by Our Minister of Agriculture, and passed for export by one of the veterinary surgeons at the slaughterhouses appointed for that purpose, and duly classified by him according to the instructions issued by Our Minister of Agriculture to the veterinary surgeons of the control (*see Coloured Plate*).

Sect. 2. (Does not apply to the United Kingdom.)

Sect. 3. Our Minister of Agriculture shall make the necessary regulations for carrying out the provisions of this present decree.

Sect. 4. This decree shall come into force on December 15 this year, on which date the Law of May 27, 1908, concerning the control of the export of meat, &c., shall come into force. From the same date shall be repealed *sect. 4* of the Royal decree No. 158 of July 12, 1907, concerning the marking of butter made in Denmark from pasteurised cream and of slightly salted bacon of Danish origin exported from Denmark.

Amalienborg, November 5, 1908.

Frederik R.

(L.S.)

Anders Nielsen.

REGULATIONS CONCERNING THE EXPORT OF MEAT AND SLAUGHTERHOUSE PRODUCTS OF HORSES, CATTLE, SHEEP, GOATS, AND SWINE

By the powers conferred upon the Danish Government by Law of May 27, 1908, concerning the control of the export of meat, &c., as well as by the Royal decree of November 5, 1908, the following regulations are hereby given to be observed in the export, sale and disposal of meat and slaughterhouse by-products of horses, cattle, sheep, goats, and swine.

Sect. 1. Authorisation of Slaughterhouses. Whoever intends to slaughter horses, cattle, sheep, goats, and swine under such conditions that the meat and slaughterhouse by-products (offal) thereby produced can be exported from Denmark, shall apply in writing to the chief of police for the district; see, however, the regulations under sect. 7 concerning meat stamped under municipal control.

The application must give information about the position of the slaughterhouse, describe its outfit and water-supply and explain the sewerage system; the chief of police shall attach his report to the application and send it direct to the Minister of Agriculture, who will notify the chief of police whether the application can be granted, which veterinary surgeon the Minister has appointed, and the scale on which the veterinary surgeon is to be paid, such payment to be made by the slaughterhouse.

At each of the authorised slaughterhouses there must be present during working hours either the veterinary surgeon or, if the Minister of Agriculture shall deem it necessary, an assistant appointed and paid by the veterinary surgeon with the sanction of the Minister.

The payment of the said assistant shall be sanctioned by the Minister and shall be refunded the veterinary surgeon by the slaughterhouse.

A number is to be given to each slaughterhouse, which number shall be on all stamps and labels used at the slaughterhouse according to sects. 3-5.

The same number may be given to several slaughterhouses belonging to the same owner.

The Minister may at any time withdraw his authorisation either of the slaughterhouse or of the veterinary surgeon and his assistant and in such case all requisites for stamping and marking delivered to the veterinary surgeon will have to be returned to the Minister through the chief of police.

All slaughtering and other work carried on in an authorised slaughterhouse shall be carried on under the control of the authorised veterinary surgeon or his assistant, and both of them, as well as such inspectors whom the Minister may send, shall at all times have access to all premises at the authorised slaughterhouse used for working or storing.

Duties of the Officers of the Control. The veterinary surgeon and his assistant shall, in the exercise of the control and in their work of marking the meat and offal, follow the directions given them by the Minister of Agriculture.

The veterinary surgeon or his assistant must be present during working hours and supervise the whole working of the slaughterhouse, must interfere if anything takes place contrary to the rules, and must carry out all the marking and stamping described in these present regulations. They must see to it that no meat or offal not passed for export nor marked to the extent required by these regulations is brought to the slaughterhouse or removed from the slaughterhouse; provided that the following goods shall be excepted from this last provision, viz., blood, stomachs, intestines, lard and tallow passed at another authorised slaughterhouse as fit for human food and accompanied by a certificate from the veterinary surgeon in charge at that slaughterhouse; goods which are carried to or from the destructor; sterilised meat; and meat of animals killed during transport (*see* sect. 2).

The veterinary surgeon and his assistant will have to see that the slaughterhouse carry out the regulations in force issued either by the Minister of Justice or by any other public authority concerning the cleanliness of the premises and the health and cleanliness of the employees; and the stamping and marking of meat and offal prescribed by these present regulations shall be evidence that the said sanitary regulations have been observed.

In case of contravention of said sanitary regulations notice shall at once be given by the veterinary surgeon to the chief of police, and to the veterinary inspector for the district appointed by the Minister of Agriculture.

The veterinary surgeon must also keep, according to the instructions of the Minister of Agriculture, a journal to be sent him by the Minister, giving details of the inspection at the slaughterhouse, which journal shall be shown on demand to the inspectors whom the Minister may send. Journals which have been completed must be returned to the Minister.

Any irregularities which may come to the knowledge of the veterinary surgeon or his assistant must be at once reported to the manager of the slaughterhouse and to the veterinary inspector for the district.

Should the veterinary surgeon have reason to think that too long time may lapse before a report of such irregularities can reach the veterinary inspector, he will have to report also to the police.

Duties of the Slaughterhouses. The decisions of the veterinary surgeon must be accepted by the slaughterhouse, but the slaughterhouse can appeal to the veterinary inspector for the district appointed by the Minister of Agriculture and may in special cases require a decision of the Minister.

The manager of the slaughterhouse must take proper steps to prevent that meat or offal not passed for export nor marked to the extent required by these present regulations is brought to the slaughterhouse or removed from the slaughterhouse, with the exceptions above described; he must conjointly with the officers of the control take proper care that the different classes of inspected offal, whether branded or unbranded, are kept strictly

apart as to classes so as to prevent mistakes ; and he must altogether see that the decisions of the veterinary surgeon are carried out.

The slaughterhouse must give the veterinary surgeon the necessary assistance to carry out the control comprising the prescribed stamping and marking, must give him a place where he can keep his journal and requisites for marking, and place a suitable room at his disposal where he can do his writing.

When slaughtering is to be carried on at a time other than the usual time the veterinary surgeon must be given at least four hours' notice, counting only hours of the day.

Sect. 2. Classification of Meat and Offal passed for Export. The animals to be slaughtered shall be inspected both alive and after slaughter while all the organs are still present so that they can be identified.

When pigs have had to be slaughtered during transport to the slaughterhouse the slaughtering may be finished at the slaughterhouse ; the carcase must, however, in such case be returned to the owner without any of the stamps or labels described below, provided the veterinary surgeon shall find it fit for human food.

The meat and offal shall be classified according to the instructions of even date by the Minister of Agriculture to veterinary surgeons at export slaughterhouses.

Sect. 3. Stamps for Meat, Heads, and Offal. All carcasses passed for export shall be marked according to the following rules with the stamps or labels prescribed by Royal decree of November 5, 1908. All stamps must be in plain and bold impressions in coloured inks of the make authorised by the Minister.

(1) For pigs of Class I. A. shall be used the stamp (Lurbrand) in red colour, with the number of the slaughterhouse (*see* Plate).

The stamp shall be applied at least on three places on each half-carcase and once on each half-head.

The veterinary surgeon shall make as many more impressions of the stamp as the slaughterhouse may require.

(2) For pigs of Class I. B. and for Class I. of horses, cattle, sheep, and goats shall be used the following stamp in blue colour, with the number of the slaughterhouse (*see* Plate).

The stamp shall be applied at least on three places on each half-carcase and once on each half-head, except that heads of sucking-calves, lamb, and goats need not be stamped.

The veterinary surgeon shall make as many more impressions of the stamp as the slaughterhouse may require.

(3) For Class II. of horses, cattle, sheep, goats, and swine shall be used the stamp in black colour, with the number of the slaughterhouse (*see* Plate).

The stamp shall be applied on sixteen places on each half-carcase of horses and cattle, on five places on each half-carcase of calves, sheep, goats, and pigs, and once on each half-head, and on more places if desired.



Date

(Signed.....)

Veterinary surgeon, authorised
according to Law of
May 27, 1908.



Date

(Signed.....)

Veterinary surgeon, authorised
according to Law of
May 27, 1908.

25 JUL 1989

(4) Tongues, hearts, and livers of Class I. of horses and cattle shall be stamped with the above stamp for meat of Class I.

Other offal shall not be stamped.

Sect. 4. Labels for Meat, Heads, and Offal. To packages containing any of the following parts of pigs of Class I. A., viz., entire carcasses with head and glands, heads, parts of carcasses—*all these being fresh*—or offal except blood, stomachs, intestines, and lard, shall be used the following label, with the number of the slaughterhouse (*see Plate*).

For offal of pigs of Class I. B. and offal of Class I. of horses, cattle, sheep, and goats, except blood, stomachs, intestines, lard and tallow shall be used the following label, with the number of the slaughterhouse (*see Plate*).

The said labels must be dated, signed by the veterinary surgeon and so placed that the officers controlling the export shall have no difficulty in seeing them. The label shall be fastened to the packing by means of a cord, on which shall be drawn a lead seal supplied by the Minister of Agriculture, which seal the veterinary surgeon or his assistant must personally fix by means of a squeezer supplied by the Minister and in such a way that it shall be impossible to get at the contents of the package without injuring the lead seal.

Sect. 5. Special Labels. (Does not apply to the United Kingdom.)

Sect. 6. Meat and Offal not Passed for Export.

Sect. 7. Export of Meat and Offal. *To Great Britain and Ireland must not be exported* any meat or offal of pigs except that which is derived from pigs which after slaughter have been stamped with the mark prescribed for meat of Class I. A.

The Minister of Agriculture may give special permission for the export in transit through Great Britain and Ireland of meat and offal of pigs, smoked or salted, not stamped or marked with the Lurbrand (Class I. A.) but otherwise passed as fit for food.

Otherwise the following rules shall apply :

Meat of animals slaughtered in Denmark and exported from that country shall bear the stamps ordered for meat of Class I. or the label prescribed in sect. 5.

Meat stamped as Class II. as well as meat passed and stamped at a municipal abattoir may, however, until further order be exported—

(1) *either* if smoked or packed in water-tight receptacles filled with brine and marked outside in plain, bold, and indelible letters: *2den Klasser Kød* (meat of Class II.);

(2) *or*—in case of pigs' meat—by special permission granted the exporter by the Minister of Agriculture. Such permission shall only be granted on condition that the business is carried on under supervision of a person authorised by the Minister and paid by the exporter, and that a declaration be sent with the goods in which the exporter declares that the meat is stamped as required, is salted and is in good and healthy condition.

Each single piece of meat for export shall be stamped with the prescribed stamp. Provided that it shall be permitted to export meat

not so stamped if such meat, in the presence of a person authorised by the Minister, has been cut from pieces of meat duly stamped or marked and, also in his presence, has been packed and sealed with a lead seal, all according to instructions by the Minister and in accordance with the regulations for the export of meat of the different classes.

Offal of animals slaughtered in Denmark, except blood, stomachs, intestines, lard and tallow, shall only be exported if passed as of Class I. and only from :

(a) slaughterhouses authorised by the Minister of Agriculture, or

(b) special businesses authorised by the Minister of Agriculture, which must be carried on according to the regulations given by the Minister. The Minister shall arrange for the necessary inspection of such business at the cost of the business.

Sect. 8. Certificates for Goods for Export. (These certificates are retained in Danish ports.)

Sect. 9. Preservatives. No other preservative than salt, saltpetre, sugar, and the products from wood-smoke shall be used for meat, offal, and manufactured products of meat, including canned goods, when intended for export, except that, until further order, a slight sprinkling with preparations of boric acid on salted sides of bacon immediately before shipping shall be permitted.

Sect. 10. Canned Goods and Sausages, &c. Whoever intends to manufacture canned goods or sausages from meat and offal as well as other prepared meat-foods under such conditions that the manufactured goods can be exported from Denmark, must obtain from the Minister of Agriculture an authorisation to carry on such manufacture. It shall be a condition for granting such authorisation that the business in question is placed under a control to be prescribed by the Minister for the purpose of ensuring that no other meat or offal shall be used for the canned goods, sausages or meat-foods than such which has been passed according to the decision of the Minister of Agriculture. By the export of goods of the kind here mentioned the packing must bear a label containing the following declaration by the manufacturer :

I, undersigned, declare that to the best of my belief this package contains exclusively goods which have been made only from raw materials approved of by the inspection authorised by the Minister of Agriculture.

(Signature and address of manufacturer)

Authorised according to Law of May 27, 1908.

The label, which must be fastened on the packing at the place of manufacture, shall be signed and fastened by a lead seal in a manner to be prescribed by the Minister of Agriculture.

Sect. 11. The necessary stamps, labels, lead seals and squeezers, as well as the printed forms for the certificates mentioned in sect. 8, shall be supplied by arrangement of the Minister of Agriculture.

No other forms for certificates than those supplied through the Minister of Agriculture shall be used and these shall be used only by

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those to whom they are supplied. They are supplied in books with counterfoils which upon demand must be shown to the inspectors whom the Minister of Agriculture may send.

Sect. 12. All meat and offal intended for export must during transport be protected from dirt. If packing is used it must be unbroken and clean.

Sect. 13. (Concerns the certificates which are retained in Denmark.)

Sect. 14. (Concerns export across the boundary to Germany.)

Sect. 15. The officers of the Customs or of the railways must refuse every package which is not marked as prescribed or is not accompanied by the certificates mentioned in sect. 8, or the packing of which is dirty or offensive, as well as all goods which smell of taint or which are insufficiently sealed or the contents of which do not correspond to the description.

Sect. 16. (Deals with ships' stores.)

Sect. 17. Officers of the Customs and of the Railways, as well as such inspectors whom the Minister may send, shall have the power to open and inspect every package containing meat and offal forwarded for export.

Sect. 18. Establishments where meat is salted may, upon application to the Minister of Agriculture before the end of November this year, obtain permission to export—not, however, to Great Britain and Ireland—during the time ending April 30, 1909, salted meat, notwithstanding that the meat has not been examined according to the provisions of these present regulations, provided it be proved to the satisfaction of the Minister that the meat was put in salt before the publication of these present regulations.

These regulations shall come into force on December 15 this year, from which date the regulations No. 20 of February 18, 1905, and No. 228 of September 22, 1906, as well as sect. 12 of the regulations No. 162 of July 13, 1907, shall be repealed; the provisions contained in sect. 10 of these present regulations shall, however, come into force on July 1, 1909.

MINISTRY OF AGRICULTURE, NOVEMBER 6, 1908.

Anders Nielsen.

H. Gram.

INSTRUCTIONS TO VETERINARY SURGEONS AUTHORISED TO INSPECT MEAT ACCORDING TO LAW OF MAY 27, 1908

Sect. 1. The inspection shall comprise all animals mentioned in the Law of May 27, 1908, which shall be slaughtered at the slaughterhouse under the control of the veterinary surgeon.

Sect. 2. All the said animals shall be inspected both when alive and after slaughter, and the veterinary surgeon shall by his examination proceed in the way described in the "rules for the examination of meat" of 1908 drawn up by the Danish Veterinary Surgeons' Association of

Meat Inspectors and approved by the Minister. Deviations from this procedure may, however, be made with the consent in writing of the veterinary inspector for the district. The veterinary surgeons shall



request the slaughterhouse to place and keep and if necessary to mark the carcasses and the organs, including the mesentery and intestines, in such a way that they can be identified.

Sect. 3. By the classification of the meat the veterinary surgeons shall follow the "Guide" of 1908, drawn up by the Danish Veterinary Surgeons' Association of Meat Inspectors and approved by the Minister and subsequent amendments approved by the Minister.

Sect. 4. The meat and offal shall be marked with the stamps supplied by the Minister of Agriculture, at the responsibility of the veterinary surgeon and according to the following rules:

Pigs of Class I. A. shall comprise only such pigs of Class I. which do not suffer from rachitis and in which or in the organs of which no trace of a tuberculous deposit has been found or from which no part of the pleura or peritoneum has been removed; these shall be stamped with the above mark in red ink. The mark shall be placed on at least three places on each half-carcass and once on each half-head and shall be placed as on the drawing here given.

The veterinary surgeon shall place as many more marks with the stamp as the slaughterhouse may require.

Pigs of Class I. B. (which shall mean all pigs of Class I. which cannot be placed in Class I. A.) as well as horses, cattle, sheep, and goats of Class I. shall be stamped with the following mark in blue ink.





The mark shall be applied on not less than three places on each half-carcase as shown in the drawing below and once on each half-head (marking of heads of calves, lambs, and goats may, however, be omitted).





The veterinary surgeon shall place as many more marks with the stamp as the slaughterhouse may require.

For Class II. of horses, cattle, sheep, goats, and pigs shall be used the following mark in black ink:



It shall be stamped on not less than sixteen places on each half-carcase of horses and cattle, on five places on each half-carcase of pigs, calves, sheep, and goats, as shown by the drawings opposite, and once on each half-head.

The veterinary surgeon shall place as many more marks with the stamp as the slaughterhouse may require.

Offal shall, besides the heads, be marked tongues, hearts, and livers of horses and cattle.

All marks must be in plain and bold impressions and in the coloured inks of the make authorised by the Minister.



Carcases of pigs intended for export as fresh pork must not be passed for export until after cooling they have been found quite rigid and dry.

Sect. 5. Meat and offal intended for export to countries where the rules regulating the import of meat prevent a thorough examination shall not be stamped but shall be marked with the special label prescribed in sect. 5 of the Regulations No. 242 of even date issued by the Minister of Agriculture.

Sect. 6. As the Importation to the United Kingdom of scrap-meat is prohibited, it shall not be permitted for the veterinary surgeon or his assistant to affix the labels prescribed by sect. 4 of the Regulations of even date to such meat intended for export to the United Kingdom.

Sect. 7. (Deals with sterilisation of meat fit for food after sterilisation but not allowed to be exported.)



Sect. 8 deals with the destruction of meat and offal unfit for food.

Sect. 9. The veterinary surgeon appointed by the Minister of Agriculture shall be responsible for the proper carrying out of the control. During the work of controlling he shall make notes in a pocket-book of the diseased conditions in succession as he shall find them. After each working day he shall enter the results of his examination in an authorised journal which shall be kept at the slaughterhouse. The veterinary surgeon shall be responsible for the use of the stamps, which shall be used only under the personal control of the veterinary surgeon or of his assistant, and which shall be kept in a locked place to which the veterinary surgeon alone shall have the key.

Sect. 10. If the veterinary surgeon at a slaughterhouse is unable single-handed to exercise the needful control, he shall procure the necessary veterinary assistance with the consent of the veterinary inspector for the district.

If the veterinary surgeon otherwise for some reason or other shall have been obliged to get another veterinary surgeon to act in his place, an entry to this effect must be made in the journal stating the reason, and the veterinary inspector must at once be informed of the occurrence. The veterinary surgeon shall make arrangements with another veterinary surgeon who, when the first one is prevented, can take over the control of the slaughterhouse. This other veterinary surgeon must be made fully acquainted with the work of the control and shall be approved by the veterinary inspector.

Sect. 11. Examination for trichina, as carried on at the authorised slaughterhouses, shall be made at the slaughterhouse itself or on other premises approved by the veterinary inspector and according to instructions given by the veterinary inspector.

The veterinary surgeon may, for the examination for trichina, employ assistants who have been approved by the veterinary inspector.

Sect. 12. The salary of the veterinary surgeon and of his assistant shall be fixed by the Minister of Agriculture and shall not be altered without the sanction of the Minister.

Sect. 13. It shall be the duty of the veterinary surgeon to bring the contents of these instructions to the notice of the director of the slaughterhouse, and to report without delay to the veterinary inspector and, in certain cases, also to the chief of police (*see* Regulations of even date) any infringements of the regulations in force for the control of the export of meat.

Sect. 14. The veterinary surgeon shall each month and not later than on the 10th of the month following send to the Minister of Agriculture a short report of his work for the control of the export on special forms for that purpose which shall be supplied to him. If the veterinary surgeon shall not during the month be called upon to make any inspection he shall report this to the Minister.

MINISTRY OF AGRICULTURE, NOVEMBER 6, 1908.

Anders Nielsen.

H. Gram.

SECTION 4 AND PARTS OF SECTIONS 9 AND 10 OF LAW NO. 208, FOR
THE REGULATION OF THE INTERCOMMUNAL CONTROL OF MEAT.
APRIL 6, 1906

Sect. 4. The Minister of Justice shall have authority to issue regulations :

(1) for the necessary cleanliness of premises, implements, clothing, &c., at all public abattoirs, slaughterhouses authorised for export, sausage factories and similar establishments and

(2) for the necessary inspection of the health of the workmen employed there.

Sect. 9. Offences against this Law and against the Regulations to be issued by the Minister of Justice under sect. 4 of this Law shall be punishable as offences against the Public Health Acts by fines of not more than 400 Kr. (£22). . . .

Sect. 10. This Law shall come in force three months after its publication in the Official Law Gazette and shall be reintroduced for revision before the end of the year 1910. . . .

REGULATIONS CONCERNING THE CLEANLINESS OF PUBLIC ABATTOIRS,
SLAUGHTERHOUSES AUTHORISED FOR EXPORT, SAUSAGE FACTORIES,
AND SIMILAR ESTABLISHMENTS ; ALSO CONCERNING THE HEALTH
OF WORKMEN EMPLOYED THERE

On this 7th day of November 1908 the Minister of Justice by the authority conferred upon him by sect. 4 of Law of April 6, 1906, for the regulation of the intercommunal control of meat has issued the following Regulations concerning the cleanliness of the public abattoirs, slaughterhouses authorised for export, sausage factories, and similar establishments, also concerning the health of the workmen employed there, which Regulations shall come into operation immediately on their publication in the Official Law Gazette :

Sect. 1. Public Abattoirs and Slaughterhouses authorised for Export. All premises where animals are slaughtered and meat dressed and all premises where meat and meat products are prepared or stored shall have windows of the necessary number and size to give sufficient light to all places used for working or storing, the windows being made to open for the sake of ventilation. The said premises shall every day be thrown open for a current of fresh air. Dispensation from this regulation may be given for such premises—particularly cold-stores and basements—where arrangements have been made for the necessary artificial light and artificial ventilation.

The floors shall be made of a material impermeable to moisture and have the necessary gullies for draining. The premises shall as far as possible have water laid on ; in any case there must be easy access to water. The floors shall be cleaned daily, not by dry sweeping, but by rinsing or washing.

Walls and ceilings which are not covered with marble or other stone or glass or similar material or painted in oil-colour shall be white-washed or lime-washed at least twice every year. Walls and ceilings which can be washed shall be carefully washed at least four times every year. Doors, wainscoting and windows shall be kept clean.

Sect. 2. If gas-engines or other power-engines which pollute the air are being used, they shall be placed in special ventilated rooms.

Sect. 3. Persons employed at the slaughter of animals or at the dressing or preparing of meat shall not change their clothes on the same

premises where the slaughter, dressing, or preparing is carried on, and their clothes shall not be kept on the same premises except it be in a separate closet with sufficient ventilation to the open air or to a chimney. When at work the employees shall wear special, suitable clothes which can be washed and which shall be kept clean.

A place where the workmen can wash shall be supplied outside the premises used for working and storing.

It shall be prohibited to spit on the floors of the premises, and on the premises, except where the slaughter is carried on; spittoons with water shall be placed which shall be emptied and cleaned after each working day.

Sect. 4. On the premises used for working or storing there shall be kept no tainted meat, offensive matter, nor any material in the shape of a dry powder which might pollute the air or spoil the meat or meat products kept on the premises, nor any goods or any matter whatsoever which directly or indirectly might make the meat products unsuitable or less acceptable as human food.

Sect. 5. Dogs and poultry shall not be allowed on the premises.

Sect. 6. All implements and machines used on the premises shall be kept scrupulously clean. Meat-hooks—which are to be nickel-plated or galvanised—shall be frequently cleansed in hot soda solution.

The butchers shall not take knives and stretchers in their mouth; dirty knives shall not be used for meat, and meat or offal of diseased animals shall not be made to touch the meat of healthy animals.

Arrangements shall be made that all implements and machines used shall be carefully cleaned after working; axes, knives, steels, saws, stretchers, and cloths shall be put in boiling water; mackintosh aprons and overalls shall be carefully washed and the butcher shall carefully wash his arms and hands with warm water, soap, and nail-brush. The preceding regulations about cleaning shall invariably be put into practice each time an animal, which is diseased or which after slaughter shows evident signs of disease, has been slaughtered and before the next animal is slaughtered.

Before cutting up carcasses, removing the shoulder-blades from carcasses of pigs or undertaking similar work, the butcher shall carefully wash his arms and hands as well as his mackintosh apron and overall.

Nothing but clean cloths and clean water shall be used for washing meat.

Sect. 7. Sausage Factories and Butchers' Shops. The provisions in sect. 1, 1st paragraph, sects. 2 to 5, and sect. 6, 1st and 2nd paragraphs, of these Regulations shall also apply to sausage factories and similar establishments for the preparation of meat products as well as to premises where meat and meat products are sold or kept for sale.

Sect. 8. Premises where sausages and similar meat products are made and premises where meat and meat products are sold shall not be used as dwelling-rooms or sleeping-rooms nor shall they directly join any room used as a sleeping-room; they shall not join a dwelling-room except by means of well-fitting doors, which shall be kept closed.

Sect. 9. The floors of the working premises of sausage factories shall be of an impermeable material. The floors of the storerooms and shops of sausage factories or similar establishments and the floors of butchers' shops may be of wood, but the cracks between the boards shall be filled out with putty, and the floors—if not covered with linoleum or a similar material—shall be varnished (painted with linseed oil) at least once every year.

The floors shall be cleaned every day and not by dry sweeping but by rinsing or washing. Walls and ceilings shall—if not covered with marble, other stone, glass, or similar material or oil-painted—be white-washed or lime-washed at least twice a year; if they can be washed they shall be carefully washed at least four times a year. Doors and wainscoting shall be carefully washed and windows cleaned at least once every week.

Sect. 10. Before starting making sausages and other similar meat products the workers shall wash arms and hands carefully with warm water, soap, and nail-brush.

Sect. 11. Transport. Vans used for the conveyance of meat and meat products shall be clean, closed, or covered with a tarpaulin or in a similar way. No meat shall during transport hang out of the van nor shall any person sit on the meat.

Meat carried on a tray or in an open receptacle shall be covered with a clean cloth, and persons carrying large pieces of meat shall wear hoods or similar protection for the head and neck.

Sect. 12. Health of Employees. No person shall be employed at the slaughter of animals, at the preparing, sale, or transport of meat or meat products, nor have anything whatever to do on premises where such work is carried on, if he suffers from any contagious disease of the skin of arms, hands, head, or neck, or in the nose, mouth, throat, larynx, or lungs (such as a peeling or secreting eruption, sore or inflammation, offensive catarrh in the nose, sores or papulæ in the mouth, throat, or larynx, cough with excessive or offensive expectoration), or from any disease whatever which directly or indirectly can infect or contaminate the goods.

Sect. 13. When a person employed at the slaughter of animals, at the preparing, sale, or transport of meat or meat products or having anything whatever to do on premises where such work is carried on, shall be taken ill with a contagious acute disease (such as typhoid fever, gastric fever, scarlatina, diphtheria, inflammation of the throat, erysipelas, cholera, or meningitis cerebro-spinalis), or be suffering from a serious contagious chronic disease (including tuberculosis of the larynx or lungs), he (or she) shall at once cease to be so employed.

If the person so suffering lives in the immediate neighbourhood of premises where meat or meat products are stored, prepared, or sold, the case must be at once reported to the sanitary authority of the district, who shall have power to require the patient to be removed and to order that the use of the premises in the said way shall cease until further notice.

Before resuming work the person shall produce a medical certificate

that the period of infection is passed, which certificate shall be forwarded as soon as possible to the medical officer of health for the district.

Sect. 14. Nothing in these Regulations shall prejudice or affect such provisions in the local sanitary regulations, which are either more stringent than the provisions of these present Regulations or which, according to their object, serve to supplement them.

Sect. 15. The provisions of these present Regulations shall apply also to such public abattoirs, slaughterhouses authorised for export, sausage factories and shops which were built before these Regulations came into operation, but the local sanitary authority shall have the power, particularly with regard to sects. 1-9, to allow a reasonable time for making the necessary alterations required by these Regulations.

Sect. 16. A copy of these Regulations shall be posted in a conspicuous place in each establishment of the kinds mentioned in the Regulations (slaughterhouses, sausage factories, shops, &c.).

Sect. 17. For offences against the provisions of these present Regulations, when dealing with personal acts, both the person concerned and the owner of the establishment shall be made responsible.

Offences against the Regulations shall be punishable as offences against the Public Health Acts by fines of not more than 400 Kr. (£22).

Sect. 18. It shall be the duty of the local sanitary committee, of the medical officer of health for the town or the district as well as of the veterinary surgeons and veterinary inspectors appointed by the Minister of Agriculture, to report to the police any offence against these Regulations which may come to their notice.

SVEND HøGSBRO

November 7, 1908.

Rønnekamp Holst

CHAPTER V

DARK SPOTS ON FROZEN CARCASSES *

It is occasionally found that the frozen carcasses of food animals, especially those which come from abroad, are rendered unsaleable on account of the presence of black spots upon their surfaces. Among those who are engaged in the meat trade this condition is termed "spot," and, in the absence of a more specific name, this short but descriptive one will be retained in the record of this investigation.

The attention of the writer was drawn to this subject in connection with a large financial loss sustained by a firm of underwriters, who had insured a cargo of frozen meat. The carcasses were so extensively affected with "spot" that the full amount of insurance was claimed. This is by no means an isolated instance of the incidence of this abnormal condition of frozen meat. Less extensive manifestations of it are comparatively common. The importance of the condition to meat traders is therefore established, and the following research is a contribution towards its ætiology.

The Naked-eye Appearance. In the specimens of infected meat which have come under my notice the "spots" were not very thickly distributed. In the specimen which was the most thickly beset there would be on a rough estimate about ten to the square foot, but usually they are more sparsely distributed, and large areas are free of them. In size they are seldom larger than a shilling, their average area is less than that, and all gradations in size occur down to the point of invisibility. Their shape is irregular, but in many the area is rounded, suggesting growth from a single centre. When the meat has been very recently removed from cold storage the outline of the "spots" appears to the naked eye to be fairly sharp, but when kept in a chamber at a temperature of $.5^{\circ}$ C. the affected area grows, and the outline of this growth is less distinct than that of the growth at a lower temperature.

The colour of these areas is a very dark greyish brown. They are found growing upon both the muscle and the fat of the carcasses, including, of course, the subcutaneous areolar tissue. It may be confidently stated that the presence of muscle or connective tissue is essential to their growth, because I have failed to obtain any growth of the causal organism on fat which had been melted and filtered. When these "spots" are cut into the pigmented substance is found to be very superficial; it is seldom deeper than about one-eighth of an inch.

* By James Henderson, M.R.C.V.S., Edinburgh. Quoted, by permission, from the *Journal of Comparative Pathology and Therapeutics*, December 1906.

The Microscopical Appearances. A thin section of a "spot," when placed under a microscope with a magnification of about 300 diameters, discloses a tangle of threads which constitute the mycelium of a fungus. In each of the ten specimens examined by me this mycelium had the same distinctive features. Each mycelial thread is closely segmented, each segment averaging in length from one to one and a quarter times the breadth of the thread. This mycelium is distinctly pigmented. Between the segments the dividing septum is brownish black, while the body of the segment is light brown. The shape and colour of these threads bring vividly to mind the general appearance of bamboo cane. This shape and colour are best seen in the deeper layers of the dark areas; at the surface the colour is less marked and sometimes the segments appear inflated and irregular, but these exceptional appearances are infrequent. Occasionally masses of spores in an enveloping membrane are seen among the threads, which are also bright brown in colour. It is the localisation of these networks of pigmented mycelium which gives to these circumscribed areas the dark coloration which is so patent to the naked eye.

In affected fowls, however, there are found additional sources of pigmentation. Here and there among the characteristic dark areas appear minute dark brown spots easily seen by the naked eye, irregularly angular in shape. Under the microscope they are semi-opaque and homogeneous. The thinner ones are rich brown in colour, resembling a thin section of dried glue; while the thicker ones appear black. These pigment plates break with a glass fracture. Occasionally small irregular blotches of granular pigment are met with. These appear to be associated with broken-down sporangia and spores, which have fallen upon the medium and become incorporated therewith. Both these forms of pigmentation were afterwards observed in cultures upon solid artificial media.

The fowls examined by me exhibited a moderate growth of aerial hyphæ, not only over the "spots" but over their neighbourhood, which was free from "spot." On the larger affected carcasses, which occasionally find their way to the public view exposed for sale, all traces of this aerial growth is washed or scraped away.

Mycelium transplanted upon Solid Media. Thin layers of these dark areas were simply placed upon the surfaces of solid media, and no difficulty was found in obtaining growth from them. Of course the growth was impure, but in every case there grew out of these layers a strong mould. In from four to six days the hyphæ attained a height of over half an inch, and had each developed a terminal sporangium. From these sporangia it was easy to obtain pure cultures of the mould. The media mostly used for the cultivation of the mould were agar, blood serum, gelatine, and bread paste. These layers of tissue containing the mycelium projected new growths of septate pigmented mycelium into the medium at the point of contact, and in the case of the agar the area below the layer after about two weeks could be observed to become

darker and darker until a rich brown-black was attained. Several weeks had elapsed before this colour transition was complete, when the hyphæ grew up to, and impinged upon, the free side of the test-tube or the lid of the petri dish, the sporangia burst, and the spores and a considerable amount of moisture were set free and spread upon the glass. It was observed that the pigmentation of the agar under the tissue layer began to present itself only after the hyphal moisture was quite dried up.

Besides the hyphal stem and the terminal sporangium, the moulds developed lateral branches bearing sporangiola, and now that the fungi had completed their development it became possible to endeavour to identify them.

Of the ten specimens examined, the *thamnidium chætocladioides* was found in eight, the *thamnidium elegans* in one, and the *chlamydomucor racemosus* in one. All three belong to the *mucor* family of fungi.*

Thamnidium Chætocladioides. When fully developed this fungus grows about three-quarters of an inch above the surface of the medium. In about four days at ordinary room temperature the hyphal stem attains a height of from half to three-quarters of an inch. The terminal sporangium is smooth and round in outline and contains a large number of spores. The minute roughness observed on its outer surface is due to the deposition of crystals of lime oxalate. When ripe it has under the microscope the appearance of a black ball. After five or six days lateral branches are freely developed. They originate from an enlargement of the stem, and grow outwards at various angles in an umbelliferous manner. In rich media, such as meat and blood serum, each branch bears a sporangium containing from two to six spores. In less nutrient media, such as agar or gelatine, some of the branches fail to develop sporangiola and terminate like spikes projecting beyond the sporangiola of the fruit-bearing branches. The sporangiola are very small when compared with the sporangia and appear black under the microscope. These groups of branches spring from the lower fourth of the stem, and in the older cultures there are usually successive groups of branches developed towards the sporangium, but there is always a considerable interval between the latter and the upper group. The area of growth on the surface of the medium is extended by mycelial threads branching in all directions.

Thamnidium Elegans. This is, as its name implies, one of the handsomest of the *mucorini*. It differs in its manner of growth from the *thamnidium chætocladioides*, inasmuch as it develops branches on the majority of its stems before the latter shoot up and bear sporangia, and the branching always constitutes the larger part of its aerial hyphæ. Its main distinguishing feature, however, is that its method of branching is dichotomous. When terminal branching is first observed on the newly erupted stem the dichotomous subdivisions of branches can be

* I was greatly assisted in this part of the research by Mr. Henry Tagg, assistant to Professor Bayley Balfour of Edinburgh University.

best observed ; the sporangiola soon form at the end of the terminal branches, and, on account of their great numbers and close proximity, greatly obscure the terminal branching. The sporangia and the sporangiola are similar in appearance to those of the *thamnidium chætocladioides*.

Chlamydomucor Racemosus. This fungus grows about a quarter of an inch higher than the other two which have been described. Its most distinguishing feature is that its method of branching is racemose, and each branch is segmented at the base. The branches are found for the most part on the lower fourth of the stem. Each branch bears one terminal sporangium, and this fungus differs from the others in that these sporangiola vary in size, the largest of them, however, being very much smaller than the sporangium which terminates each main stem. Otherwise both sporangiola and sporangia resemble those of the two other fungi described.

Although these three fungi present very distinct differences morphologically, the differences observed in the effect of their growth upon various nutrient media are inconsiderable and the *chætocladioides* is chosen for description because this fungus was found to be the causal organism in eight out of the ten cases, and deserves the premier position.

Reproduction of the Condition. The isolation of these three fungi in the manner described forms strong presumptive evidence of their being the causal organisms of "spot." To finally establish this theory of its ætiology, however, it is necessary to reproduce upon meat this septate pigmented mycelium which constitutes "spot" by means of pure cultures of the fungi in question. In this endeavour pure sub-cultures of *thamnidium chætocladioides* were used to form cultures upon beef and mutton.

The reproduction of this desired mycelium proved to be a matter of some difficulty. Of the twelve unsterilised meat cultures made all were failures. Out of twenty-nine sterilised ones the specific mycelium was found in six, but in two of these only a few threads could be demonstrated. Various conditions as to temperature, &c., were experimented with, including anaerobiosis, but it is not necessary to burden this record with an account of these failures, though they were in themselves instructive. I shall, however, proceed to state under what circumstances this mycelium was produced in the case of the four most successful cultures.

Four small pieces of "River Plate" mutton, cut from the flank, were placed in as many petri dishes and sterilised by exposure to superheated steam in an autoclave. They were exposed to the heat for fifteen minutes, three separate times, at intervals of eight hours. Two of the pieces were inoculated on November 8, 1905, from an agar subculture two weeks old. These were incubated at 37° C. for two days, then at 4.5° C. for seven days. The remaining two pieces of mutton were inoculated with the same culture as the above on November 13, 1905, and incubated at room temperature for four days. The purpose of this proceeding was to make certain that the fungus had germinated and gained a foothold upon the media, which is by no means always the case in sterilised mutton. Before being frozen the older pair of cultures had developed hyphæ and

sporangia on one or two patches. In the later pair the hyphæ were first apparent at the points of inoculation. On the 17th of the same month all the four cultures were placed in a tin box, and the latter was buried in salt and ice giving a temperature of -15° C. for three days. They were then removed from the ice, and one of the oldest two cultures was uncovered and examined, but not displaced from its fixation to the bottom of the dish. It was frozen hard, and its hyphal growth appeared darker in colour. Then all four cultures were placed in an ice-safe and kept at a temperature of -5° to $+ .5^{\circ}$ C. for twenty-two days, when they were examined microscopically. They had been removed for a few minutes from time to time for observation. A few days before the date of their examination one or two dark slowly broadening lines were observed on the edges of fat, which had been melted with the heat and had solidified again. Pieces of this black edging were examined under the microscope, and *they exhibited the diagnostic septate pigmented mycelium which characterises "spot."* The culture which had been opened was extensively contaminated with penicillium glaucum, but the others appeared pure. The specific mycelium was also found in two of the cultures upon the upper surface after the felted layer had been scraped off. The free surface of the mutton was entirely covered by fungus growth, which reached the upper surface of the petri dish. The surface of the mutton was closely invested by a light brown felted layer composed of hyphæ and dark brown sporangia and spores.

Cultures upon artificial media made from these black lines in the fat developed pure cultures of the *thamnidium chætocladioides*. The total area of "spot" thus found in these cultures was small when compared even with the area of fat which had been melted. At first sight this seems very disappointing, but upon further consideration it appears that this is exactly what happens in affected carcasses. In fowls, for example, which were examined by me, a meagre but distinct growth of hyphæ was found spreading all over the affected areas, but underneath this growth the small "spot" areas were distinctly circumscribed, and their total area constitutes only a very small part of that exhibiting hyphæ. Why the mycelium exhibiting this vigorous septation and pigmentation which constitute "spot" should be distributed in widely scattered circumscribed areas is by no means clear. In some unexplained way it appears to be selective with regard to location.

The Partial Reversion of the Causal Fungi of "Spot" to the Oidian Form of Growth. The mycelium of the causal fungi of "spot" is found spreading over large areas of the infected carcasses. This mycelium is divided into two sharply contrasted kinds, namely, the dark "spot" mycelium appearing as small islands widely distributed over the larger surface, which is infected with the ordinary featureless unpigmented mycelium. This normal mycelium which surrounds each "spot" area has few segments at long intervals, and its threads vary in thickness and divide only into smaller ones. The "spot" mycelium is very closely segmented; each segment has the power of reproducing a similarly

segmented thread of the same thickness, and so many of them do this that a tangled network is the invariable result. This close segmentation and the reproductive power of each segment mark the oidian form of mycelium. The term oidian requires explanation, and no better can be found than that given by von Tavel * in his work on fungi :

“The *chlamydomucor racemosus* and its relations . . . develop their sporangiophores and sporangia exclusively in the air like *mucor mucedo*. But where there is insufficient admission of air, as, for example, when it is forced to grow submerged in a liquid medium, its growth suffers considerable modification. As in the other mucors, the mycelium is not originally septate ; when ripe it is divided into separate segments, each of which under normal circumstances can develop a sporangiophore. Upon rich nutrient media segmentation and fruit-bearing can proceed with greater luxuriance. This can be carried so far that the mycelial threads divide into quite short joints, from each of which a sporangiophore grows up into the air. But in liquid media, as above mentioned, fructification never follows and the production of fruit hyphæ is impossible ; these branch joints separate from one another, become like spores independent, and grow vegetatively and so beget again mycelium ; in their further growth they behave like the spores of sporangia. The small branchlets of *chlamydomucor racemosus*, when fructification into sporangia becomes hindered, fall into numberless single spores. This event is properly designated Oidian Formation (Oidien-Bildung), because under the name *Oidium fungi* have been described of which only one method of fructification is generally known. When submerged in water these oidian spores grow out into threads ; if they come, on the contrary, into contact with the air, their method of fruit-bearing is that each produces a sporangiophore, like that which under normal circumstances each mycelial thread, which does not divide into spores, would develop. . . . Morphologically speaking, it (the oidian spore) is nothing but an independent mycelium segment intended for fruit-bearing. The oidian method of growth is a constantly recurring feature of the fungus family, and since its morphological value is nowhere so clearly demonstrated as in the case of *chlamydomucor racemosus*, the foregoing description should be borne in mind.”

This author clearly indicates that fungi of the type which is the cause of “spot” revert to a simpler and more primitive form of growth when they encounter adverse conditions. Experiments were made upon liquid cultures in order to repeat, if possible, the results described in the above extract. The three fungi already described were grown upon milk and bouillon, from which air was excluded by means of a stratum of oil. In the milk cultures, after incubation at room temperature for a few days, some oidian unpigmented mycelium was recovered from the *chætocladioides* and *thamnidium elegans*, and from the *chlamydomucor* in a bouillon culture.

* “Vergleichende Morphologie der Pilze,” von Dr. F. von Tavel, pp. 31 32. Verlag von Gustav Fischer, Jena, 1892.

This investigation further discloses that low temperature is one of the adverse influences which cause *thamnidium chætocladioides* to revert to the oidian formation in the mycelium of spot areas. Why this abnormal reversion to the oidian formation occurs only at widely scattered points among the surrounding normal mycelium, however, is still wrapped in obscurity. It was not until late in the investigation that the significance of this oidian formation was realised.

The aerial hyphæ of "spot" infected carcasses exhibit a variety of unusual forms. Those associated with sporangia are of two kinds; one with strong wiry stems frequently and regularly jointed, and serrated at the joints so as to suggest the appearance of the cutting edge of a saw; the other form is that of short, stunted sporangiophores terminated by brown sporangia.

Besides these, two oidian forms were found, one of which proved to be *phlebia merismoides* when grown upon artificial media. It is true that this fungus is not botanically classed with oidia proper, but it is a perfect example of what von Tavel terms *Oidien-Bildung*; the hyphæ are closely segmented and terminate in moniliform branches, which are simply chains of oval spores. On the frozen tissue the *phlebia merismoides* appears as a greyish white downy growth. The other oidian form on the frozen carcass has the appearance of a tangled spider's web, and is of the same colour. Under the microscope it is seen to grow out from a short stem in a delicate, frequently segmented thread, which bears at short intervals very thick branches, most of the latter being composed of from one to five segments, whose breadth greatly exceeds their length.

All cultures in artificial media made from these oidian aerial hyphæ reproduce only two distinct fungi, the *chætocladioides* and the *phlebia merismoides*.

The presence of widely scattered sporangium spores of the *chætocladioides* makes it uncertain whether the growth of normal *chætocladioides* originated from the undetermined oidian growth or from the accidental presence of the above spores.

Pigment. The brown pigment is the product of the metabolism of these fungi. It is produced in all cultures on solid media at room temperature. It is, however, very tardy in formation. It is never observed until after the hyphæ have parted with all their moisture. In ordinary gelatine stab cultures, or, better still, when merely inoculated on the surface, it is not perceptible until about two weeks have elapsed. Long before that time the hyphæ have reached their fullest development, and the mycelium has penetrated nearly to the bottom of the medium in a fleece of delicate ramifying threads. After from two to three weeks the brown tint appears at the surface, and slowly and gradually permeates downwards, the deepest colour always being nearest the surface. On agar cultures the pigmentation is slower and less complete. In blood serum the colour is the most intense, the shallower part of the streak culture is first coloured, and in about two months or more the entire medium is coloured a dark seal-brown.

On all old meat cultures which have been frozen a bright brown felted layer is formed by the decayed hyphal growth and the fallen spores, and when the surface is scraped a dark brown colouring is disclosed, showing that the pigment is stored in this *débris*. The pigmented mycelium which is so rarely found in artificial cultures was twice found in small areas beneath this covering. In "spot" infected carcasses where there is aerial hyphal growth, scraping the surface produces dark patches in the same way and for the same reason as in artificial cultures. Beneath the tissue surface the only pigment found is that which is incorporated in the oidiau "spot" mycelium. Pigment is never diffused through frozen tissue, and the ordinary mycelium is conspicuously free of it.

Temperature. The temperature at which the spores of fungi can germinate has a very important bearing upon this subject. De Bary * writes :

"The cardinal points in the *germinating temperature* of spores have been exactly ascertained for a few fungi only. Wiesner found the minimum to be from 1.5° to 2° C. in the gonidia *penicillium glaucum*, the maximum 40° to 43° C., and the optimum about 22° C. ; the cardinal points are probably similarly situated in very many fungi in our latitudes."

Convenient permanent gradations of temperature were not accessible ; still the following experiments have some value. Cultures on agar and serum of the three fungi which were found to cause "spot" were made, and were placed within half an hour in a chamber registering -5° C. They were examined after remaining three weeks in this chamber, and as might have been expected the spores had failed to germinate. Other similar cultures were made and incubated at room temperature for twelve hours, in which time germination had taken place. They were then placed at -5° C. for three weeks. Examination after that period disclosed the fact that no further growth had taken place.

In the sterile meat cultures in which "spot" had been successfully reproduced, as has been already stated, two exhibited minute aerial hyphæ, and the other two had sporangia developed before they were immersed in ice and salt, and they were kept at a temperature of -15° C. for three days. During the ensuing three weeks they remained at a temperature varying from -5° C. to $.5^{\circ}$ C., when, on examination, the specific mycelium of "spot" was found. These experiments indicate that, in order to produce "spot," the spores of the causal fungi must not only have germinated, but must at least have had their mycelial threads fairly well established upon the surfaces of the carcasses anterior to the time when they were exposed to a freezing atmosphere.

It is difficult to get an accurate history of infected carcasses, but regarding one group the following details are well authenticated. A consignment of fowls apparently in good condition, and which had not previously been frozen, was placed in a cold-storage chamber, in which as nearly as possible a temperature of -5° C. was maintained. After two

* "Comparative Morphology and Biology of the Fungi Mycetoza and Bacteria," by A. de Bary, Oxford, 1887, p. 349.

years of continual storage the fowls were found to be affected with "spot," and aerial hyphæ of moulds were apparent in all the sheltered crevices about the wings, legs, and neck. This furnishes indisputable evidence that moulds can grow in an atmosphere below freezing-point. Four of these fowls were examined by me. The actual spot areas were small and not numerous. Cultures of skin from these areas developed *thamnidium chætocladioides*. The aerial hyphæ were those described in a previous part of this record, and cultures made from them developed only two fungi, viz., the last named and *phlebia merismoides*.

Results of substantial value can be obtained by comparing the thermal conditions under which "spot" has been produced naturally in the fowls and artificially in the sterile mutton. In the fowls continuous low temperature during two years only produced small and very widely scattered "spot" areas. In the mutton cultures exposure to -15°C . for three days was followed by exposure for three weeks to a temperature varying from $-.5^{\circ}\text{C}$. to $+.5^{\circ}\text{C}$., that is, just about freezing-point. In these cultures the amount of "spot" produced, when viewed in relation to the possible area available, was much greater than that seen upon the fowls. In other words, two years of continuous low temperature produced relatively less "spot" in the fowls than about four weeks of the intermittent temperature above mentioned accomplished in the cultures. The conditions which are essential to the production of "spot" are, first, germination and mycelial growth at or above freezing-point, and, secondly, exposure to a temperature considerably below that point. Its production is greatly accelerated by a subsequent return of the temperature to freezing-point.

General Considerations. It is possible that mucors other than those here described may be found to cause "spot." Other fungi are found growing on meat at the temperature used for preserving purposes. Oster-tag states that on meat in cold storage at a temperature of -4°C . moulds appeared after three or four months. A manager of an extensive cold-storage plant states that under ordinary conditions no carcasses can escape the attack of moulds after exposure for six months to a temperature of -5°C .

Little is known about the effect of these moulds upon meat with regard to its fitness or unfitness for use as human food. Doyen and Roussel state, when treating of the biological properties of the *muco-rini*, that none of these fungi are pathogenic. It must be borne in mind that not only is the tissue under the dark areas of "spot" infested with a mycelium of an oidian type, but that the surrounding area is also similarly affected with the normal mycelium, which gives to the naked eye no indication of its existence. Then the certainty of the existence of other moulds, which may not be of the same innocuous character, must be considered. Unless it can be proved that the advent of "spot" has been hastened by an accidental raising of the temperature, "spot" infected meat must be considered to have been in cold storage for many months, and therefore exposed to the attacks of such moulds as have

deposited their spores upon the surfaces of the carcasses, and which have the power of growing at low temperatures. While it is true that these moulds do not penetrate very deeply into the tissues, such carcasses are unmarketable and may fairly be described as unsound.

Summary. "Spot" is the result of the growth upon the surfaces of frozen carcasses of the pigmented mycelium of fungi of the mucor family.

The causal mucorini isolated from the affected areas are the *thamnidium chætocladioides*, the *thamnidium elegans* and the *chlamydomucor racemosus*.

Magnified three hundred diameters, this mycelium is seen to be of oidian formation. It is closely segmented, and so many of the segments reproduce these specific mycelial threads that a dense network results. The brown pigmentation of the threads gives to this network the dark appearance of a "spot" area.

Spore germination and initial mycelial growth take place upon the surfaces of the carcasses before exposure to a freezing atmosphere, but growth continues during such exposure when "spot" is formed.

The adverse influence of low temperature upon the growing fungi causes them to assume the oidian form of growth at widely distributed points, which constitute "spot" areas.

CHAPTER VI

REPORT ON THE NATURE OF "BROWN SPOTS" ON BEEF *

MESSRS. JAMES NELSON AND SONS, LTD., consulted me through their Secretary, Mr. Philip Holmes, about certain beef quarters imported in chilled condition—"chilled beef"—from the Argentine. The beef arrives in Liverpool as chilled beef (hind-quarters) and when the wrappings are removed the outer surface of the thick (gluteal) portion, occasionally extending a little forward to the concave parts, appears more or less covered with brown spots. Such beef is regularly rejected by the meat inspector, although the deeper parts of the fat and the flesh itself look perfectly normal and sound. A large percentage of such beef is occasionally affected with these brown spots and consequently an enormous loss is incurred, since such affected beef cannot be, and is not, sold at present.

The quarters, soon after the beef is "dressed" at the factory, are hung up in the chilling-room and subjected to low temperatures—between 39° and 30° F., and during this time are covered with stockinette, and over this with a coarse canvas material. Then the covered chilled quarters are transferred to the chilled room or box on board ship; this box is sealed and not opened till the landing of the ship at Liverpool. On board ship the quarters are hung up, but so closely that they are in contact at their convex (gluteal) portion, and with the movement of the ship these portions of the quarters must necessarily exert considerable pressure on one another.

(1) **Appearances of the "Brown Spots."** The spots are in some places well isolated, in others more closely placed, and in still others so abundant and close that they form confluent patches. Where isolated, the spots are more or less circular or oval, showing a deeper brown or reddish brown central and a lighter yellow brown peripheral filmy portion. When passing over the affected part with the edge of a scalpel nothing is apparently removed, or when pressing a glass on the spotted part nothing of the spots adheres to, or is removed by, the glass, thus showing that the spots are not on the free surface. This is confirmed by scraping off the superficial loose cellular tissue, because it will then be seen that the brown spots are well embedded into the superficial part of the subjacent fat layer. Making a vertical incision into the fat tissue, it is found that the central portion, and to a lesser degree the peripheral portion, of the spots penetrate into the fat, but not more than $\frac{1}{12}$ th to $\frac{1}{10}$ th of an

* By E. Klein, M.D., F.R.S. Quoted by permission.

inch, so that the bulk of the fat tissue and *à fortiori* the fleshy part of the beef are free from the affection.

(2) **Nature of the Brown Spots.** Digging out a particle of the brown spot and examining it under the microscope, it will be seen to consist mainly of oval yeast cells, some larger, some smaller, and forming extensive clusters; amongst them and extending outwards we see shorter or longer threads, some quite like smooth mycelial threads, others irregular beaded; some appear made up of oval elements, others showing at one or the other point or at their extremity an oval or pear-shaped knob. Further, we see in the course of one or the other filament a lateral oval sprout, and in connection with this a smaller or larger cluster of yeast cells. Many of the yeast cells show smaller or larger spherical or oval buds-gemmation, which proves them to be really yeast cells. Both the cells and the filaments are gram-positive on staining and include vacuoles and more or less numerous brown to red-brown granules: these are either discrete, more or less angular and of different sizes, or they form small clumps.

The stockinette with which the spotted beef had been wrapped up was examined and it was found uniformly pervaded by the same fungus—yeast cells and threads. In accordance with the absorbent nature of the fabric, the fungus was found not only in that portion of the wrapping which had been in contact with the spotted portion of the quarter but also in distant parts. It needs no stretch of argument to maintain that such a condition of the stockinette probably plays an important rôle in the infection of the beef itself; for given a primary infection of the stockinette with the fungus, the mechanical element of pressure amongst the quarters obtaining on board ship (*see* above) would explain the subsequent infection and reinfection of the beef.

From these appearances there can be no doubt that we are dealing with a species of yeast (*Blastomyces*) belonging to the well-known group of fungi termed *Saccharomyces*. Of these a vast number of species have been described as occurring in water, air, beer, various excremental matters, and so on. These *saccharomyces* are widely distributed in nature, and, according to a number of observers, German, French, and English (*see* Plowright, “British *Uredineæ* and *Ustilagineæ*”), the spores of some of the higher fungi, thriving on grasses, shrubs, thistles, &c., may under certain conditions give origin to certain forms of *saccharomyces*.

As stated just now, a good many species of *saccharomyces* are prevalent in beer, others are found occasionally in milk (*oidium lactis*) and probably derived from bovine excremental matters; some, like the thrush fungus, are connected with the white growth on the mucous membrane of infants; and, lastly, they are obtainable from water and air, into which they have been carried from their original breeding-grounds.

There can also be little doubt that the *saccharomyces* which infects the above beef, and by its growth and spread forms the brown spots, must have been derived from outside nature: water, air, or excremental matter, and deposited on the beef or the stockinette, whence by



MOULD UPON IMPORTED MEAT

This condition has given rise to considerable trouble from time to time. It appears to be quite superficial. It is here shown on part of a carcass of frozen mutton. In this case the mould was chiefly of the black variety ; there was, however, some white and green mould as well. (Dr. Hope's Collection.)

mechanical pressure its germs have been able to penetrate—been pressed in—underneath the free surface of the loose cellular tissue and lodged in the superficial layer of the fat. We shall presently describe direct experiments which fully prove these suppositions, and there is, therefore, on these grounds alone, no justification for a suggestion that might possibly be offered, viz., that the fungus has been derived from the inside, and been present in the animal itself.

As to the presence of brown or red-brown particles both in the yeast cells as also in the threads, but particularly in the former, it is clear that they, where numerous, would readily account for the colour of the brown spots on the beef, since each spot is in reality a colony, *i.e.*, a dense mass of the fungus, the thicker mass or cluster of cells of the centre of the spot showing a deeper colour than the thinner filmy peripheral part containing more threads than the centre. The same distinction between a dense central mass, chiefly composed of yeast cells and a peripheral part composed chiefly of threads, is manifest in the colonies growing on our laboratory nutritive media, as will presently be described.

Vertical sections made through the affected parts fully confirm the above statements as to the distribution of the fungus in the superficial layers of the fat itself. The sections show dense aggregations of yeast cells in the superficial layers of the fat, whence they extend in continuous streaks between the fat cells.

In the central part of the "brown spot" the aggregation of yeast cells is greatest, and from here they gradually shade off towards the periphery and the depth. Only few threads are noticed in the sections amongst the yeast cells, and they (threads) appear limited to the deeper parts.

(3) **Cultural Characters of the Fungus.** There was no difficulty in obtaining pure cultures of the fungus from the brown spots; a vertical section was made with a sterile scalpel through several spots, both of the first as also of the second lot of "spotted beef" received, and from the deeper part of the brown spot of the superficial layer of the fat tissue a small particle was dug out with the point of a lancet. This particle was rubbed over the surface of sterile glucose gelatine (nutritive gelatine with 2 per cent. grape sugar) which had previously set firm either in a plate or in slope in a culture tube, and the culture was then incubated at 20° C. After twenty-four hours abundance of colonies of exactly the same kind were noticed all over the surface of the culture medium; in fact, we obtained what was practically a pure culture of the fungus. Each colony was a raised, more or less circular smooth knob or button, somewhat dry-looking, in reflected light whitish, in transmitted light opaque. But already at this early stage of incubation some of the colonies showed numerous shorter or longer radiating, single or branched beaded threads projecting into, and buried in, the medium underneath—horizontally and vertically. Forty-eight hours' incubation showed each "button" beset with the threads in all directions below its surface but not in its projecting portion. As mentioned on a former page, the "button" is made up practically of yeast cells, whereas the beaded

threads are well beset with lateral or terminal clusters of yeast cells, that is to say, the growth presents the typical appearances of a saccharomyces. The yeast cells, as also the threads, contain the same brown granules that were mentioned of the natural brown spots, with this difference, that in the cells and threads of the artificial cultures their number was much smaller than in the natural state. The same appearances as seen on sugar gelatine culture are presented by the fungus also on ordinary nutrient gelatine.

In a stab culture, both in ordinary nutrient gelatine as also in glucose gelatine, the same distinction in each colony between a central spherical mass of yeast cells and radiating beaded threads (radiating in all directions) is observed, except with this difference, that the colonies situated nearer to the surface of the stab possess longer and more numerous radiating beaded threads than those farther away from the surface.

In agar the appearances are the same as in gelatine. In broth and glucose broth the growth is equally rapid and abundant; while the fluid remains fairly clear there appear numerous granules at the bottom and adhering to the sides of the tube, each granule being composed of a central mass of yeast cells and numerous threads radiating from it.

The fungus, as mentioned, grows readily and copiously in ordinary, as also in sugar gelatine, but while it rapidly liquefies the former (ordinary gelatine)—liquefaction being pronounced already in 24 to 48 hours at 20° C.—liquefaction of the latter (glucose gelatine) does not set in under these conditions of temperature before eight or ten days. In both cases the liquefied gelatine is clear, while the growth forms coherent membranous masses sinking to the bottom of the clear liquefied gelatine.

The fungus grows well on steamed potato, forming a whitish, thick, rapidly spreading film, composed almost entirely of yeast cells, gemmation of minute unripe yeast cells from large mother cells is abundant and therefore readily demonstrated. Milk remains unaltered in aspect by the growth of the fungus, the resulting growth showing yeast cells and short threads.

The fungus grows well at ordinary room temperature, but shows no growth whatever at temperatures at or above 35° C.; it therefore does not grow at animal blood-heat. Experiments were made in testing different low temperatures at which the fungus is capable of growing.

(a) Cultures were made on sloped ordinary gelatine, sugar gelatine, and nutrient agar, and kept in the refrigerator at 42° F. Slow but distinct normal growth took place in forty-eight hours and later.

(b) Similar cultures (sloped surfaces liberally infected) were placed by Mr. Holmes and myself in the cold stores at 34–36° F.; (c) at 28–30° F.; and (d) at 16–18° F.

After keeping the cultures for ten days in these cold stores they were inspected, and the following results were noticed: at 34–36° F. all tubes showed good growth; at 28–30° F. very slight but distinct growth; and at 16–18° F. no growth, the agar being frozen. These culture tubes which showed no trace of growth (16–18° F.) were then kept at the

temperature of the room for forty-eight hours, when all showed abundant normal growth. So that while this low temperature for ten days inhibited the growth it did not kill the fungus, since good growth was afterwards developed in these same culture tubes, without further new infection.

The fungus does not show growth under anaerobic conditions; after two to three weeks at 20° C. there is practically no growth.

From these experiments it would appear that given the infection, it would be able steadily to progress at the temperature of the chilling-room on board ship, particularly if it is remembered that the temperature here is at or above 32° F.; moreover, at the points where the quarters are in contact with one another the proper circulation of the cold air is reduced or prevented.

(4) **Culture Experiments on Beef with the Fungus.** (a) In the first place bits of the "spotted beef" were removed, not greater in thickness than about a quarter of an inch; with the outer or free surface of the affected bits, normal beef (gluteal portions) and normal mutton were infected by merely touching their surfaces. These were then kept in covered glass dishes either at the temperature of the room or in the incubator at 20° C.* After a fortnight and more they showed no signs of any spots or of any growth having taken place on the normal meats. Similarly, pieces of beef suet, each about two inches square and half an inch thick, were infected on their surface, and were kept in the same manner as the above, but with no result.

(b) In the second place bits of meat (beef covered with its fat layer), as also bits of beef suet, were infected by digging out from the depth of the brown spots a particle and digging it into the depth of the fresh beef or fresh suet. The result was positive: from the point of inoculation, marked as a brown spot, in the course of a fortnight or later, a slow progress of growth could be followed, inasmuch as the point of inoculation became surrounded by a faint yellow-brown halo just the same as in the naturally affected beef, but this progress of the growth was very slow, and after one to three weeks at 20° C. the whole spot did not measure more than an eighth or a tenth of an inch in breadth.

From this experiment the conclusion must be drawn that the primary infection by the fungus and the development of the brown spots was not merely infection of the free surface, but the microbe must have been mechanically pressed underneath the very superficial layer, *i.e.*, underneath the loose cellular tissue.

(c) In the third place, bits of beef, as also bits of suet, were infected on their free surface with artificial culture of the fungus, in the same way as we infect in the laboratory the surface of culture media, *viz.*, by taking up a particle of the growth and spreading it over the surface of the new medium by means of a platinum wire or platinum loop. The result was that no growth took place; after ten days or a fortnight at 20° C. no growth could be recognised. Slight but insignificant growth

* These, as also all other cultures on beef and suet, were kept in a moist atmosphere, as the presence of moisture is essential for the success of the experiment.

could, however, be produced by digging the culture material into the beef or suet ; with a magnifying glass a faintly yellow brown halo could be recognised.

These experiments show that the fat tissue covering the beef—that is, the parts which are the natural seat of the brown spots—is not a suitable nidus for the growth and development of the fungus, and that therefore such development on the beef quarters should not be difficult to prevent.

(5) **Animal Experiments with the Fungus.** A series of experiments, both by feeding and by subcutaneous injection, were made with rodents—guinea-pigs and mice. In each set of experiments two animals of each kind were used. The following are the details :

(a) Guinea-pigs and mice were fed on the original infected meat with brown spots. The material used was finely minced and mixed with chopped-up greens for the guinea-pigs, with bread soaked in milk for the mice. The amount of the food given was sufficient to last for two days. The animals remained unaffected.

(b) The material dug out of the brown spots of the meat was distributed in salt water, and about half a cubic centimetre of the turbid emulsion was injected subcutaneously into guinea-pigs and mice. The animals remained quite normal.

(c) A whole slope culture of sugar gelatine covered with a thick layer of the fungus was melted in warm water, then mixed with chopped-up greens and given as food to two guinea-pigs ; a similar melted sugar gelatine culture was mixed with soft bread and given as food to two mice. The animals remained quite unaffected.

(d) The entire copious growth of an agar slope was distributed in salt water and injected subcutaneously into two guinea-pigs and two mice. The animals remained quite unaffected.

These altogether negative results are readily understood if it is borne in mind that the fungus cannot exist at the temperature of the animal body.

From these experiments it is clear that the spotted parts of the meat are perfectly harmless and, *à fortiori*, it follows that the flesh itself, that is, the parts underneath the seat of the brown spots, *i.e.*, underneath the $\frac{1}{10}$ th or $\frac{1}{12}$ th of an inch of the superficial fat, must be considered quite wholesome. It does not seem in harmony with the above facts that on account of a superficial affected layer comprising not more than $\frac{1}{10}$ th or $\frac{1}{12}$ th of an inch of the surface fat, large portions of the quarter beef should be declared unfit for consumption ; to my mind this would be an unnecessary waste of good and wholesome food. The proper procedure would be to remove the superficial thin layer of the infected fat, being considered offensive to sight, but there is no reason for condemning as unfit the main portion.

(6) **Conclusions.** From the foregoing observations it appears to me that the following conclusions can be drawn and recommendations made :

A. The affection of the beef, that is the brown spots, is caused

by the infection with and growth of a particular species of *saccharomyces* in the most superficial layer of the fat underneath the loose cellular tissue covering it.

B. This infection and production of brown spots is due not merely to a deposit of the fungus germs on the free surface of the beef, or on the stockinette, or both, but must be in addition ascribed to mechanical force being applied by which the deposited germs are rubbed in, as it were, into the superficial layer of the fat. The complete isolation of the brown spots in many parts of the affected beef indicates that each isolated spot is caused by a separate germ deposited and pressed in at the spot, the same as is the case with the separate colonies on the surface of our laboratory culture media, viz., each germ deposited and planted at a particular spot gives rise to an isolated and single colony of the fungus.

C. The infection would take place prior to the transference of the quarters on board ship, because at this period the beef had been covered up and protected. We are assuming in this deduction that the covering material is clean, but regard should be had to what was said on a former page. In order to ensure this, a material of denser texture, *e.g.*, calico, than the stockinette hitherto used should be employed, and further, to ensure that this calico is clean, it should be first sterilised by heat in the same way as such fabrics are sterilised, either by prolonged dry heat or by flowing steam under pressure.

D. All processes prior to hanging up the quarters in the chilling-room should be performed as cleanly as is practicable, including the use of sterile water (boiled or steam condensed) employed for wiping down the meat while dressing it. Likewise the cold air *circulating uniformly* into every part of the chilling-room should be filtered through a suitable cotton-wool pad, so as to avoid the introduction of the fungus germs with the outside air in which they probably abound. I understand that at present the air that is passed into and that is circulating in the chilling-room is not renewed from the fresh air, and that it is conducted through and passes out of a wooden conductor, which at the same time carries with the air an amount of moisture; this is objectionable; the air should be frequently renewed, should after chilling be dried, then filtered through the cotton-wool pad and carried along metal pipes.

All these processes would be of importance in avoiding the introduction of the probably widely distributed fungus germs.

E. After the quarters have been ensheathed in the sterile canvas and transferred to the chilled box on board ship, secondary precautions to be taken are: the interior of the box should be clean and disinfected; the low temperature to be maintained in the box should be uniform; and the quarters should remain separated, for, as we mentioned on several preceding pages, the contact and pressure exerted by the quarters on one another when suspended closely seems the very mechanical force required to press in the germ into the parts—superficial layer of the fat—in which they are enabled to grow and to multiply; and this also

prevents a free circulation of the cold air between the parts in contact with one another. Thereby a condition, viz., rise of temperature, would be created at the points of contact and pressure of the quarters, at which the growth of the fungus would be enhanced, probably to a considerable extent.

It does not appear to me likely or probable that the fungus is derived from one particular and limited source, but it seems more probable that it is fairly widely distributed at the works, and it is therefore essential that all materials used should be clean, all processes free from chance of introducing the fungus infecting the meat, and that all conditions enhancing the growth and multiplication on and in the beef should be avoided; that is to say, even if the germ had by chance been deposited on the beef, it should be made as difficult as possible for it to get a foothold, as it were, and to make that progress which ultimately manifests itself as the brown spots.

F. Lastly, the fungus is perfectly harmless for the animal body, and apart from the unsightliness there is no necessity to condemn as unfit for food a large portion of the quarter of which only the superficial part is affected with the brown spots. The removal of the most superficial layer of the fat would fully meet all objection.

NOTE. A piece of beef submitted to me by Mr. Holmes exhibited about half a dozen "white spots." These were irregular or round small white powdery granular patches, easily wiped off from the surface, leaving no appreciable mark behind. Examined under the microscope the material is composed of yeast cells and threads ensheathed in air. This shows that it is a *saccharomyces* growing on air-exposed surfaces, it is in fact one of the most common of air yeasts, such as we constantly meet with in the laboratory on substances exposed to the air. It occurs on many food materials exposed for some time to the air; it can be seen on hams, on sausages and other food-stuffs, the wholesomeness of which is not questioned. Symbiotically with the above air yeast was found a common harmless *aircoccus*, covering and penetrating both the yeast cells and the threads.

CHAPTER VII

REPORT ON THE NATURE OF "BLACK SPOTS" ON CHILLED BEEF *

I RECEIVED on June 3 the top piece, rump, and thin flank of a hind-quarter of Argentine chilled ox-beef, the surface of which exhibited in many parts numerous more or less circular "black spots." These were present either isolated or in groups; they occurred on the lower or thin parts in the fascia; they occurred in the fatty portion of the thick parts, as also scattered about in the lumps of fat belonging to the inner surface of the flanks. The size of these spots differed considerably; some were not more than $\frac{1}{10}$ th to $\frac{1}{8}$ th inch in breadth, others were larger—about $\frac{1}{4}$ of an inch; few were irregular and in their greatest breadth about $\frac{3}{8}$ th inch.

On examining the spots very carefully with a magnifying-glass it was evident that they belonged to the superficial parts of the tissue itself, without, however, extending above the free surface; for by passing over them a scalpel nothing tangible of the matter of the "black spot" could be removed. This is also well shown by making a vertical section through the parts containing the black spots, for then it is seen that the "black spots" were entirely embedded in the tissue: fascia or fat. The thickness of the black spots, that is, the depth to which the matter of the black spots extended into the tissues, varied considerably; in some parts, *e.g.*, fascia, the depth amounted to not more than $\frac{1}{32}$ nd of an inch, in other parts, *e.g.*, the fat layer covering the muscle, the depth was greater but not more than $\frac{1}{24}$ th to $\frac{1}{20}$ th of an inch; the greatest depth was noticed on the lumps of fat of the flanks, here some of the spots reached a depth of $\frac{1}{10}$ th to $\frac{1}{12}$ th of an inch. The thickness of the black spots stood in no relation to their breadth, since on the lean parts—fascia—some broad spots did not reach deeper than $\frac{1}{32}$ nd inch, while on the lumps of fat in the flank region some relatively small spots reached a thickness of $\frac{1}{12}$ th inch.

The Cause of the Spots. In all cases the main portion of the black spots belonged to the superficial layers, whence the colour more or less rapidly faded towards the deeper part. About two years ago, when examining these black spots on some pieces of beef on which I had reported, I had mentioned (May 1907) that they were due to the presence of a mycelium—probably that of a *Hyphomycetes* (mould)—the threads of which mycelium are of a dark green or olive-green colour; their

* By E. Klein, M.D., F.R.S. Quoted by permission.

aggregation in the tissue furnishes the tissue with the appearance of a "black spot." In the present examination this is fully confirmed; the mycelium is composed of branched septate threads of various thickness—as is common in all mycelial growths—the colour of the threads being dark olive green, more distinctly dark green in the thicker than in the thinner threads. Many of the threads—both thick and thin—contain in some parts spherical small granules and globules apparently of a faintly green colour; the size of those globules varies from that of a granule just discernible under a magnifying power of 300 to that of a globule about $\frac{1}{3000}$ th of an inch in diameter. What is striking about the distribution of these mycelial threads is (1) that they are everywhere only present in the connective tissue between the fat cells between which they run either singly or in groups and strands; from them numerous lateral branches pass off which encircle the fat cells horizontally; and (2) that close to the surface many of the threads, without extending beyond the surface, appear to curve like loops back into the tissue. It seems then from this that the fat tissue is the proper soil for their growth and that they appear to avoid the free surface.

The Tissues under the Microscope. While the depth to which the main "black" material is limited, as above stated, in vertical thin sections examined with a high power it can be seen that isolated (green) threads coming off the main mass penetrate between the fat cells to a greater depth than the above, but this is only noticeable where the fat tissue is of considerable thickness. Here isolated threads extend into the depth to about $\frac{1}{10}$ th or $\frac{1}{8}$ th of an inch, and here, of course, the fat tissue is not visibly altered in colour. I have carefully examined the tissues beyond—connective tissue, fat tissue, and muscular tissue—and have not seen in them any indication of structural alteration; in fact, even in the tissue containing the bulk of the mycelial growth the connective tissue and the fat cells appear structurally quite normal. The microscopic appearance and structural condition of muscular and connective tissues underneath the parts containing the black spots is everywhere perfectly normal.

From these facts I think it can be concluded (1) that removing a thickness of $\frac{1}{8}$ th to $\frac{1}{4}$ th of an inch of the superficial layer containing the black spots is perfectly sufficient to ensure the entire removal of all the mycelial threads; and (2) that the tissues within and underneath the layer of "black spots" are quite unaltered and normal.

The Presence of "Free Threads." I have made numerous attempts to cultivate this mycelium on our usual laboratory media, at 20° C. and at 37° C., but with very indifferent results. It occurred to me, seeing that the growth is naturally pre-eminently limited to the fat tissue, *i.e.*, being situated between fat cells, to use the original fat tissue in part of which the mycelium is embedded as a culture medium. For this purpose I made vertical sections through the thickness of the fat tissue containing the dark green mycelium as well as of the unaffected parts, and mounting the sections in a dry state on a glass slide covered with a cover-glass, I exposed the preparations in this condition to varying temperatures.

At 37° C. and at 20° C. (98° F. and 70° F.) no change whatever occurred in the mycelium. But in the refrigerator and in a damp atmosphere at temperatures of 45° to 60° F. (8° to 15° C.) in a few days the multiplication of the green mycelium in the tissue became very conspicuous; the number of the threads became greatly increased and abundantly ramified; numerous thin and thick, dark and light green, solid-looking threads with rounded ends were seen growing out from the original dark green mycelium. In addition to these, similar solid-looking but colourless, apparently non-septate, shorter and longer, more or less branched threads (hyphæ) were growing out from the free surface of the section into the air-space between cover-glass and object-glass, and these rapidly in a few days became very numerous; they could with ease be traced as direct outgrowths from the dark green threads contained in the fat tissue. After some further days some of these "free threads" or "hyphæ" commenced to show signs of fructification, consisting in the following appearances: numerous short lateral branchlets were sprouting out from long wavy hyphæ—the former distributed in numbers along a single long thread; each of these lateral branchlets contained a few (2 to 4) finger-like short prolongations made up of rows or linear series of oval cells or gonidia, that is to say, distantly resembling the fructification of hyphæ of a *Penicillium*, or perhaps more correctly of an *Oidium*; these prolongations and gonidia, however, are elliptical and not spherical like those of the typical *Penicillium glaucum*. A further important fact, still more suggestive of *Oidium*, was this, that the gonidia multiplied by gemmation, *i.e.*, after the manner of *Torulæ* or Yeast cells. By lengthening, the gonidia start new septate threads.

Result of Inoculation. At the same time in connection with the green threads within the fat tissue a similar process of fructification could be observed near the surface here and there: either at the end of a thread—thick or thin—or in the course of it there appeared clusters of small oval cells or gonidia, which appeared like continuations of the granulo-globular contents of the threads. The clusters of gonidia, at first small, soon enlarged, many of the oval cells showing distinct signs of gemmation after the manner of *Torulæ* or Yeast cells.

Having obtained sufficient material by the copious multiplication of the mycelium within the original fat tissue, as also copious fructification of the oval gonidia on the free threads (hyphæ) extending, as above stated, into the air-space between cover-glass and object-glass, I proceeded to inoculate various substances, some with the dark green mycelium, others with the hyphæ and oval gonidia: sugar gelatine, beef suet, the fatty portion of boiled beef. The result was in all cases striking and positive, the infected materials being kept in the refrigerator at temperatures varying between 52° and 60° F. (11° to 15° C.).

On sugar gelatine the development in a few days of a numerously branched mycelium radiating in all directions from the point of inoculation with the ultimate formation of oval gonidia in numerous lateral branchlets of the hyphæ could readily be observed. The mycelium in the depth is

made up of distinctly green threads and their mass to the naked eye appeared dark olive-green to black.

The Fungus Named. In beef suet the formation of the green mycelium could easily be followed, the green threads penetrating into the depth and copiously branching between the fat cells; here also after some days the same oidium-like fructification of oval gonidia on short lateral branchlets of hyphæ was very pronounced.

Equally striking results were obtained on the fat portion of the boiled beef. After ten or eleven days there appeared, at the point of inoculation with the gonidia, numerous dark green to black spots of varying sizes, which when examined under a low power (in horizontal sections) showed the typical dark to light green branched mycelial threads penetrating into the depth between the fat cells; numerous lateral branchlets composed of linear series of the oval gonidia sprouted from the hyphæ.

From these facts it appears justified in considering the green fungus as belonging to the group of *Oidium*, producing oval gonidia, which multiply by gemmation. It is also clear that the fungus causing the "black spots" does not belong either to the *Mucorinæ* or to the group of *Aspergillus*. I propose for it the name of "*Oidium carnis*."

From the above cultivation experiments it became obvious that the fungus not being able to thrive at a temperature of the animal body (98° F.) no pathogenic action could be expected. The direct animal experiment fully confirmed this supposition.

With an emulsion of the original "black spots" two guinea-pigs were injected, using large doses for the injection. The result was quite negative. No tumour and no change in the animals' condition was noticeable. In one animal, when killed forty-eight hours after the injection, the seat of inoculation was carefully examined, but there was no trace to be discovered of the injected material. The other animal was watched for ten days and more, but it remained without any local or general change.

Conclusions. It appears, then, from these observations that the mycelium forming the "black spots" belongs to a fungus of the nature of an *Oidium*, "*Oidium carnis*"; that it forms oval gonidia either by short lateral branches of the free hyphæ or along and at the ends of the superficial threads in the fat tissue. In both instances the oval gonidia are capable of multiplying in the manner of yeast cells. Belonging to the *Oidium* kind of moulds and not capable of growing at the temperature of the animal body (37° C.) it is obvious that the material of the "black spots" is harmless to the animal body, which is confirmed by direct animal experiment. The presence of the mycelium does not in any way alter the normal character of the tissue elements themselves, either those amongst which the mycelium is situated or those beyond its extension.

CHAPTER VIII

THE DEAD MEAT TRADE BETWEEN SCOTLAND AND ENGLAND *

(IN view of the increasing attention which has been drawn to the possibility of developing in Ireland a dead meat industry similar to that at present carried on between the North of Scotland and the Central Market at Smithfield in London, the Department deemed it advisable to send over an officer to investigate and report upon the conditions under which the business is worked. The results of the inquiries made are embodied in the following article.)

The London Central Market for dead meat at Smithfield, which was opened in 1868, is recognised as the largest meat-distributing centre in the world. The supply of beef which is daily forwarded to it is both of home and imported origin. The home supply, which in recent years, owing to the development of the chilled meat trade, scarcely amounts to 20 per cent. of the total, is sent from the chief feeding districts in England and Scotland. North of Scotland feeders, especially, prepare the great majority of their fat cattle for consignment in the dead meat form to Smithfield, and owing to the superior manner in which cattle from these districts are finished, the dressed carcasses sent from there command the highest prices in the market and are known as Prime Scotch. Owing to its situation in the midst of the large fattening counties, and its convenience as a railway and shipping centre, Aberdeen is generally regarded as the most important seat of the industry in the North of Scotland. Large quantities of dead meat are sent week by week during the year from here to Smithfield, and though at a number of other centres a considerable amount of slaughtering for the despatch of dressed carcasses to London is done, the trade is chiefly concentrated and developed around Aberdeen itself. The latter place was in consequence selected as the most suitable position from which to conduct an inquiry into the nature of the dead meat trade in the North of Scotland.

The Class of Persons engaged in the Trade. The greatest part of the Scottish meat trade with Smithfield is carried on by a class of men who buy the cattle when fat either directly from the farmers, or at the local auction marts, and, after slaughtering, consign the dressed carcasses to salesmen in Smithfield for disposal. These men are the mainstay of the fat cattle trade in the North of Scotland, and may be described as dead meat consignors. In addition to these, however, certain classes of

* From the *Journal of the Department of Agriculture and Technical Education in Ireland*.
VOL. V. 1857 K

butchers occasionally send to London consignments of dead meat, especially the more valuable portions of the carcasses which can be more profitably disposed of at Smithfield than locally. The business is, in the main, however, largely monopolised by the dead meat consignors, though a number of fleshers from time to time take part in the trade, according as the circumstances of their particular business prescribe, or as the current prices in the London market offer inducement. Special prominence, it may be mentioned, is given in the daily press to the prevailing quotations for dead meat at Smithfield, and in this way consignors are enabled to follow the trend of the market closely, and to decide on the most advantageous times to forward supplies. So far as could be ascertained, there are no co-operative societies engaged in the trade. A large number of farmers in Inverness and Ross-shire kill and send on their mutton dressed for sale, but very few take part in the dead cattle trade with London. In an occasional instance, where farmers are dissatisfied with the live prices obtaining locally, the cattle may be entrusted to commission butchers who, for a charge of 4s. to 5s. per head, will dress and work them up for the London market.

The Capital involved. The question of determining the amount of capital individually involved by dead meat consignors was, owing to the nature of the trade, found to present considerable difficulty. The business unquestionably represents a considerable amount of floating capital, but it is not easy to locate the persons actually responsible for it at any particular stage. An illustration will make this matter clear. A butcher starts business with the intention of consigning the valuable hind-quarter portions to Smithfield, and of retailing the fore-quarters in his shop. For the purpose of fitting up the latter he may require an initial capital of from £150 to £200. This expense over, he attends one of the local auction marts and buys cattle to the extent of £200. The auction mart people, if they rely on the man's capacity and stability, give him the cattle on a week's credit. Within this time he has the cattle disposed of, and with the price realised, is enabled to pay the amount due at the week end, and is in a position to purchase again. Meanwhile he may have had similar transactions with one or two other marts carried on in the same manner. From this it will be seen that a man with comparatively small capital may be responsible for a large turnover of money from week to week; the money value of the cattle handled is large, but the responsibility for the time being rests on the auction mart companies. Credit in fat cattle given to such men by the auction marts is, however, very rarely abused, and the risk of loss found to be slight.

The Most Suitable Type of Cattle. The class of cattle which Scottish feeders prefer for feeding are the ordinary Aberdeen-Angus type of the country. These, as a rule, are short-legged, level-backed, early maturing beasts, with fine coats, and when finished carrying the flesh very evenly distributed all over. Black polled cattle, whether pure bred or first crosses, are regarded as ideal beef animals, and it is claimed for them that they respond so much better to feeding than the Irish imported bullocks



FIRST PRIZE IRISH-BRED TWO-YEAR-OLD AT INVERURIE CHRISTMAS SHOW AND SALE

that they can be sold off considerably earlier, and on an average will yield a higher percentage of dressed carcase to live weight. At the same time large numbers of Irish store cattle suitable for feeding are annually brought into all the counties engaged in the fattening industry. These Irish cattle are mostly shorthorn crosses of good quality, and dealers who supply these districts from Ireland find that there is no demand from feeders except for the very best quality of stores, strong, level-backed beasts with well-sprung ribs, good pliant hides, and a general appearance of growthiness. Most Scottish feeders prefer to get Irish cattle as young as possible, and a large number of calves ranging from seven to nine months old, and, at prices averaging from £5 15s. to £6 10s., are imported in the late autumn months every year. The preference given for young cattle of this age is evidently due to the fact that Scottish feeders keep growth continuous during the first winter by careful and generous feeding; in this way the desirable calf flesh is maintained, and a healthy development of the whole frame is promoted, more especially at a stage when any check in growth or poorness of condition through insufficient feeding or careless treatment marks itself most detrimentally to the profitable keep of the animal afterwards. In addition to these weaned calves or small "stirks," which range in price from £4 10s. to £7 15s., a great number of Irish stores are also bought in each year for fattening. These vary in age from 15 to 20 months old, and cost on an average from £8 to £12 according to quality. In either case, Irish-reared cattle are usually kept over by Scottish feeders till fit for disposal in the fat-stock market at the age of 2 or 2½ years old. Sold at this stage, these cattle, if well finished, will make from 10 to 11 cwt. live weight, and bring from £20 to £22 in the auction mart ring. The opinion prevails generally that the younger class of Irish cattle return the most profit, and one instance was given of a Scottish feeder who purchased in the late autumn a bunch of sixteen Irish-reared heifer calves which, when sold at about two years old, made an average price of £21 each. Contrasting the black polled cattle with the imported Irish shorthorn-cross beasts, it was conceded that given similar feeding and treatment, little difference in the weights might be expected; the black cattle will, however, reach maximum growth earlier, and can be finished more quickly, whereas the Irish cattle, if slower in growth, have a greater scope, and after a certain stage in feeding—when the black cattle are fully finished for killing—continue to increase materially in weight, and ultimately produce a heavier carcase. The counties in which the infeeding of cattle is most extensively carried on are Forfar, Kincardine, Aberdeen, Banff, Moray, Nairn, East Ross, Inverness, and, to a small extent, Sutherland. These, it will be noticed, constitute the eastern portion of North Scotland, and thus corroborate the statement made, that if a line were drawn direct north and south through the northern half of Scotland, the cattle in the country would be found mainly to the east of this imaginary division and the sheep to the west of it. The extent to which cattle-rearing enters into the agriculture of this part of Scotland may indeed be judged



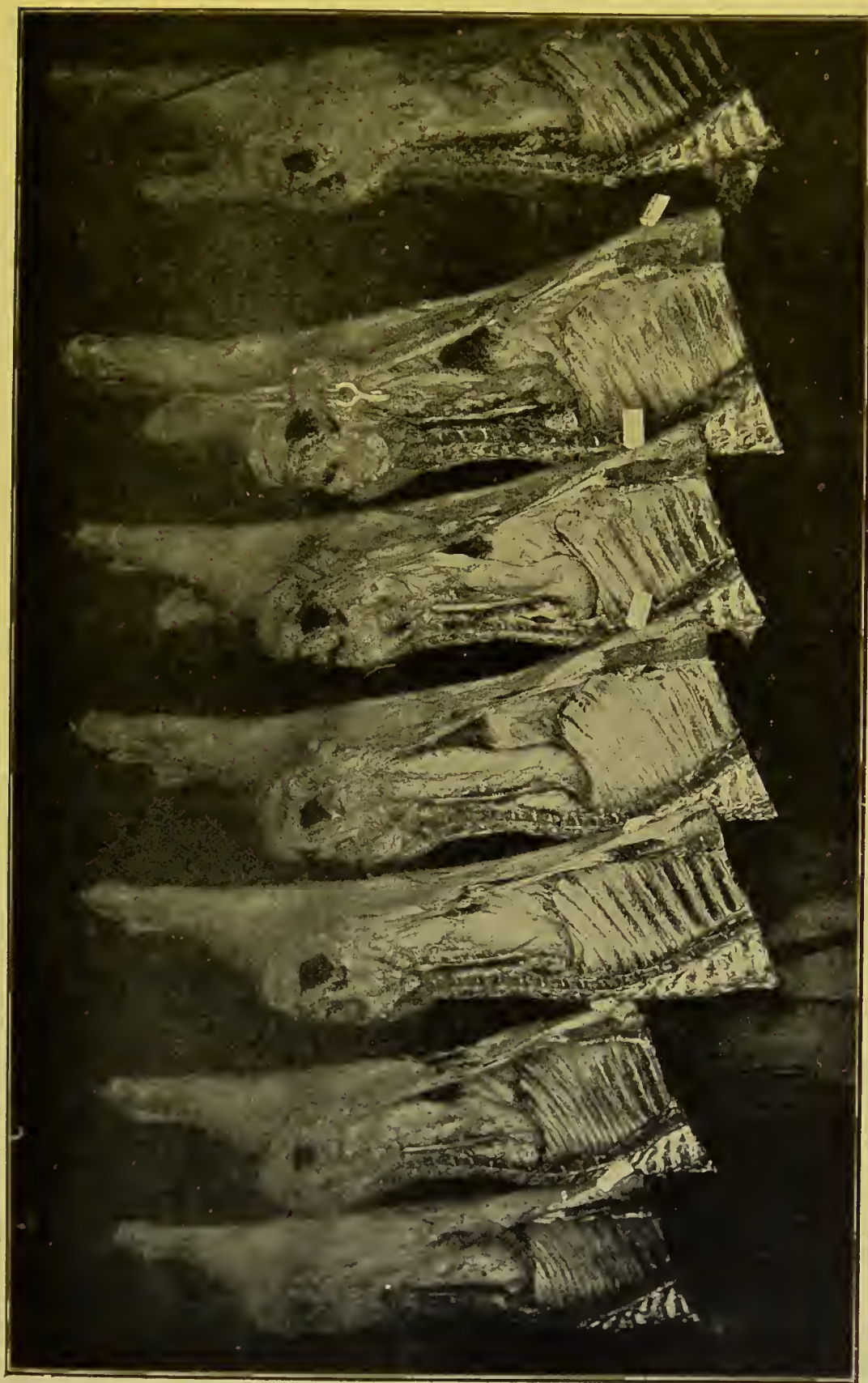
LONG SIDES: FIRST PRIZE MEAT FOR THE LONDON MARKET

from the fact that Aberdeenshire alone contains one-seventh to one-eighth of all the cattle in Scotland. Although Aberdeen by virtue of its position is the largest centre of the dead meat trade, a considerable amount of cattle throughout the feeding districts are also killed at smaller places, such as Keith and Inverurie.

Aberdeen as a Killing Centre. In Aberdeen the chief slaughterhouse belongs to the butchers of the city, who have formed an Incorporated Society known as the Fleshers' Incorporation. At this slaughterhouse over 25,000 cattle are killed every year. Many of the cattle intended for the London market are here killed and dressed; the hands employed are very expert, and two men will have an animal killed and the carcase dressed within half an hour. After the hide has been taken off and the various descriptions of offal removed, the carcase is split down the centre of the back into two separate halves or sides. This cleaving is done in a special way with the hatchet, and the saw, which is generally used for severing the sides, is not employed. This it is claimed by Scottish butchers gives the dressed side a better appearance, and is supposed in the trade to furnish a proof that the beef is genuine Scotch. The two sides are then weighed in order to determine the proportion of dead weight carcase, and are allowed to hang for twenty-four hours in order to cool and dry out.

Carcases of beef are sent to Smithfield either as long sides or as short sides—more frequently referred to among those in the trade as “shorts.” The long side represents the entire half of the carcase; the short side means that the fore-quarter, which comprises the rougher and less valuable portion of the meat, has been removed, generally by cutting the side square across behind the shoulder and between the second and third ribs. On the day after killing, these long sides, or, if cut, short sides, are prepared for conveyance to London. A distinct white linen label showing the name and address of the consignor and also the name and address of the consignee is affixed to the ribs on the inner side of the carcase. The carcase is then securely wrapped round with strong, coarse packing canvas and neatly sewn up with cord, after which, for the direction of the carriers, a similar label is affixed outside. This done, the sides, which usually weigh from 3 to 3½ cwt., are released from the overhead hooks, carried out on the shoulders of two men, and neatly arranged in rows on lorries which convey them to the railway station. Aberdeen consignors have a choice of sending their meat by two railway lines—the Caledonian or the North British. If by the former it passes over the London and North-Western Railway system to London; if by the latter over the Midland Railway system. The freight charge by either of these lines from Aberdeen (523 miles to London) is £3 17s. 6d. per ton, plus 4s. 4d. per ton for market tolls or “pitching,” *i.e.*, loading and unloading the sides on vans for conveyance to the stalls of the commission agents in Smithfield.

Formerly the sides of dead meat were piled on the floor of the railway vans, one on top of the other, but as this caused an amount of damage to the beef, more especially in warm weather, the railway companies have



SHORT SIDES AS DRESSED FOR THE LONDON MARKET

made provision for each side to be hung separately while under conveyance. For this purpose the special meat waggons used are fitted with a series of iron bars across the top. On these run movable iron hooks from which the sides are suspended, and consequently saved from any danger of injury. Four sides are usually hung in a row to each cross-bar, and an ordinary-sized six-ton waggon will have space for thirty sides. To ensure cleanliness in handling, the floors of the waggons are coated with a substantial layer of fresh straw. During the summer season special refrigerating vans of this type are provided. The time taken in transport between Aberdeen and London is about twenty-seven hours: thus dead meat sides loaded in Aberdeen during the day leave there at 7 P.M., arrive in London the following night at 9.30 P.M., and are delivered in Smithfield Market the next morning. During the winter months it is estimated that fully one-third of the dead meat sent from Aberdeen is consigned by the steamers of the Aberdeen Steam Navigation Company. There is a tri-weekly service of those vessels direct to London—the landing wharf being at Limehouse, within easy carting distance from Smithfield, and though the freight is only £2 10s. per ton—considerably less than by rail—and the time in transit only three hours longer, there is the drawback that no provision is made to transport the sides hanging nor are there any refrigerating chambers for use in hot, close weather. For these reasons, even though the biggest bulk of the dead meat trade with London is done from November up till the last weeks in May, the two railway companies command by far the larger portion of the traffic. In this connection it may be mentioned that the comparative rail and steamboat rates for live cattle from Aberdeen to London by the same routes are 25s. and 16s. per head respectively. A comparison of the railway rates for the two forms shows that in the case of a 10-cwt. animal, which kills 6 cwt. dressed beef, the latter will be conveyed for 1s. 9d. less than the freight for the same animal if sent alive.

How the Meat is classed at Smithfield. The destination of all the dead meat sent from the North of Scotland to London is, as already stated, Smithfield Market. Smithfield Market was established by the Corporation of the City of London as a centre of supply for the retail butchers of London. It is very centrally situated in the city, and consists of a series of large glass-roofed halls containing rows of shops or stalls for exposing the meat for sale. These stalls are tenanted by firms who sell beef on commission or who kill largely and dispose of their own dressed carcasses. The market opens at a very early hour in the morning, and the retail butchers from all parts of the city are busy purchasing their requirements from 4 o'clock A.M. onwards. Each class of butcher buys the quality of beef—the particular portion of the carcasses which the nature of his trade requires. Thus in the line of quality he can choose from Prime Scotch, English, English-killed American, American chilled, South American chilled, or South American frozen: if his is a select trade he may be looking to buy hind-quarters only: on the other hand, if his trade is chiefly with the working class, he will confine his purchases to the cheap



PACKING THE SIDES IN CANVAS FOR DESPATCH TO LONDON

fore-quarters or the rough boiling portions such as the flanks. The rate of prices which prevails in the market from day to day appears to be regulated largely on the basis of supply and demand. Beef in Smithfield is bought and sold at so much per stone of 8 lb. Quotations according to quality are usually given in terms of this weight. The following report, taken from an Aberdeen paper, shows the rates for the different kinds of meat on the markets for one particular day (December 7) :

“London (Central).—A fairly good quality was available this morning and had a fair demand at firm prices. Arrivals comprised 60 tons Scotch, 400 Liverpool sides, 800 American refrigerated hind-quarters, and 700 fore-quarters, also 2700 Argentine chilled hind-quarters and fore-quarters. Quotations : Scottish sides, 4s. 2d. to 4s. 6d. ; short sides, 4s. 8d. to 5s. ; English, 3s. 9d. to 3s. 11d. ; American, Deptford killed, primes, 3s. 7d. to 3s. 9d. ; seconds, 3s. 3d. to 3s. 5d. ; Liverpool firsts, 3s. 6d. to 3s. 8d. ; seconds, 3s. 3d. to 3s. 6d. ; American refrigerated hind-quarters, 3s. 8d. to 4s. 4d. ; seconds, 3s. 2d. to 3s. 6d. ; fore-quarters, 2s. 6d. to 2s. 8d. ; seconds, 2s. 2d. to 2s. 5d. ; Argentine chilled hind-quarters, 2s. 7d. to 3s. ; fore-quarters, 2s. 1d. to 2s. 3d.”

Scottish beef, it will be seen, commands the highest price, reaching 7½d. per lb., or 70s. per cwt. for the short sides. The long sides are generally from ½d. to ¾d. per lb., or 6d. per Smithfield stone (8 lb.), lower in value than shorts, though in some seasons the sides of choice heifers will make as much as the hind-quarters of rough bullocks. Should the difference be less than this, consignors do not usually consider it advisable to take off the fore-quarters, but forward the whole carcasses. All the Scottish supply is consigned to the different commission salesmen in the market, who dispose of it at a commission of 2½ per cent. The top price which Scottish beef fetches in the London market is undoubtedly due to the superior degree of finish to which the cattle are brought before being killed, as well as the way in which the carcasses are dressed and put on the market. Scottish feeders and consignors fully recognise that only animals which have been really well finished are suitable for the Smithfield trade, and so thoroughly is this appreciated and acted upon throughout the chief supplying counties that the quality of the “Prime Scotch” sent to London remains surprisingly uniform throughout the year.

Value and Use of the Offal. One of the most important branches of the dead meat trade is that which deals with the offal. Thus at a centre like Aberdeen, where so many cattle are slaughtered every year, a large number of subsidiary industries are directly dependent on the supply of offal which the local slaughtering affords. Some parts of the offal are, no doubt, disposed of to other centres. Thus the hoofs are sent to Lancashire for glue-making, the intestines are forwarded to a Glasgow firm for sausage-making, and the hides are sold at special weekly sales to representatives from the chief tanning centres of the Midlands ; on the other hand, the horns, which go away attached to the hides, find their way back to be manufactured into combs, &c., by a local company ;



LEAVING THE SLAUGHTERHOUSE

a large proportion of the tallow is utilised locally for soap-making, and such bones as may be on hand find a ready market from two large manure manufacturing firms. Besides this, there are various ways in which edible offal is worked up for local consumption to the advantage of both producer and consumer. In Aberdeen the following classes of firms have been largely called into being through the existence of the dead meat industry :

Hide and tallow merchants,
Comb makers,
Soap and candle makers,
Manure manufacturers,
Oil-cake manufacturers,
Skinner and wool merchants.

The value of the offal, which includes hides and horns, tallow, head, tongue, tail, feet, kidneys, heart, liver, tripe, windpipe, spleen, blood—in fact everything except the dressed carcass, is estimated by Scottish butchers at so much per cwt. of dead-weight carcass. This estimate ranges from 7s. 6d. to 10s. per cwt., but 8s. was given as representing most nearly the average value, taking one class of cattle with another. Thus the offal of a bullock weighing $10\frac{1}{2}$ or 11 cwt., which would kill at about 6 cwt. of dressed beef, would be valued at approximately £2 8s. Another method of estimating the offal value suggests itself in finding the approximate commercial value of each of the different parts thus :

Hide and horns	70 lb. at $4\frac{1}{2}d.$	£1 6 3
Tallow	64 „ at 3d.	16 0
Head, tongue, tail	35 „	6 0
Feet	20 „	10
Kidneys (pair)	$2\frac{1}{2}$ „	1 6
Back collop	2 „	1 0
Heart	6 „	1 0
Liver, tripe, &c.	14 „	2 6
Blood	30 „	1 0
Stomach entrails (empty)	20 „	1 9
		£2 17 10

It will thus be seen that the average value of the offal from a fat beast ranges from £2 8s. to £3 according to the degree in which the different parts can be utilised and worked up ; in London market it is generally accounted that the value of the offal from cattle classed as prime beef approximates to 50s. per head.

Conditions of Success. In view of the possibility of starting a dead meat trade between Ireland and Smithfield, it may be well to draw attention to one or two features of the industry as it is carried on in Scotland which will require to be kept clearly in mind by Irish farmers if the effort to develop a profitable trade in really first-class meat is successfully accomplished.

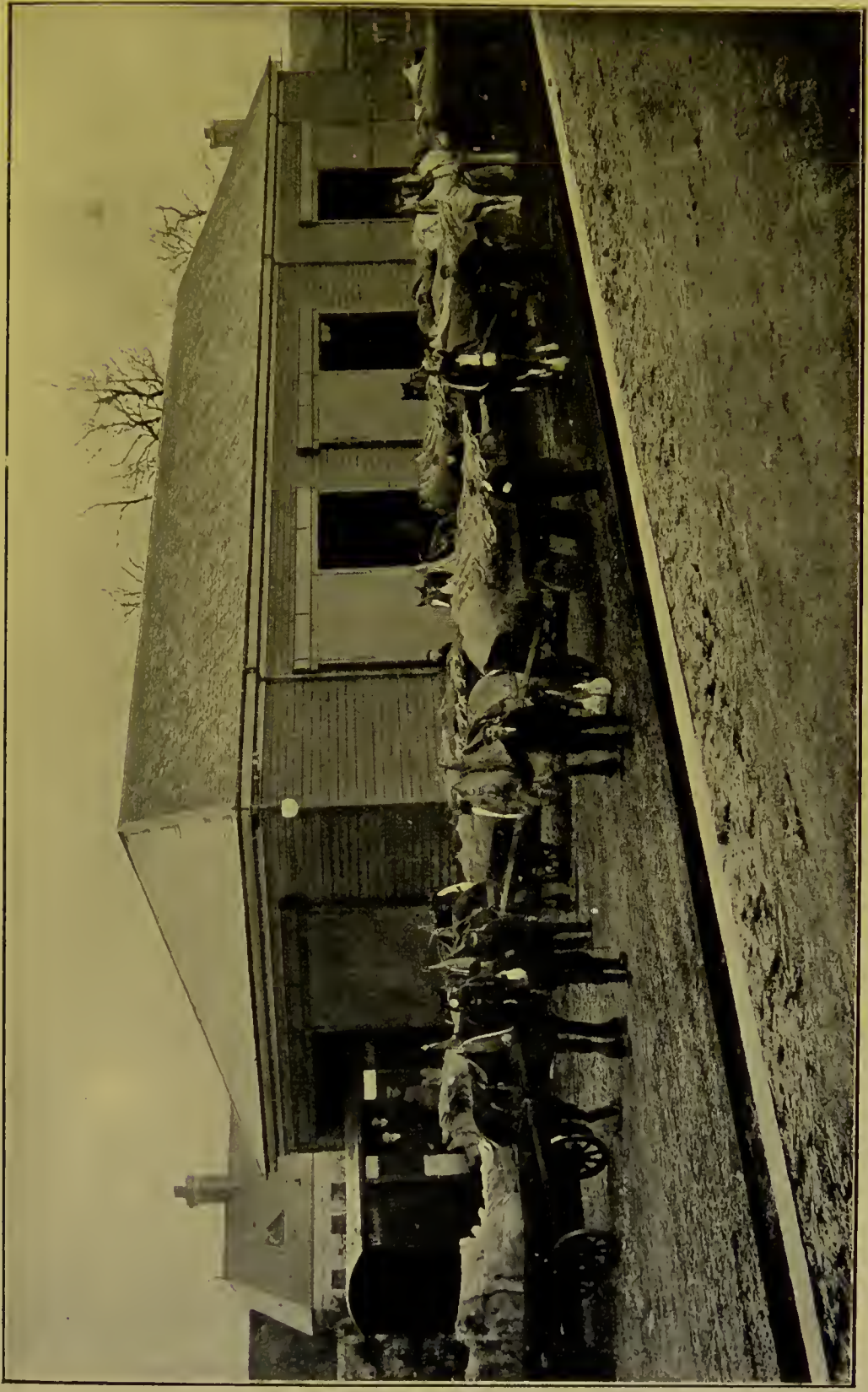


LOADING THE DEAD MEAT IN SPECIAL RAILWAY VANS

(1) In the first instance, attention will need to be given to the quality of the animals kept and their suitability for beef production. The North of Scotland possesses animals of an admirable beef type in the native Aberdeen Angus and their crosses. The demand in London at present is not so much for size as quality; the black-polled cattle, inasmuch as they mature early and are profitable to feed, and if well finished give a high proportion of dressed carcase, are especially suited to both breeder and consumer. At the same time, from inquiries made, the Irish-reared cattle which are brought over as stores to the feeding districts can be equally well and profitably fattened for the London market. Indeed, according to an estimate given, fully one-third of the cattle which are killed in Scotland and disposed of in Smithfield Market as prime Scotch are Irish-reared. Inasmuch as these cattle represent the best quality of Irish stores, it is evident that with care in breeding and grading there is nothing to prevent Irish farmers from producing cattle of a type and quality suitable for marketing in dead meat form at Smithfield.

(2) Another feature of the cattle-feeding system in Scotland is the early stage at which the animals are finished and ready to be disposed of as fat. No doubt many of the cattle are naturally of the quick maturing type, but there can be little question that much of the success in this respect is due to the treatment and feeding given to the animals during their first year's wintering. Feeders generally recognise the value of the calf flesh for early fattening and take care that their young animals do not lose it either through unsuitable housing or insufficient feeding. The system practised in Ireland represents a very unfavourable contrast, and is one feature of the Irish cattle industry which requires to be essentially improved, more especially if success in profitable fattening is to be afterwards obtained.

(3) The extra finish of Scottish-fed cattle, coupled with quality, has earned for Scottish beef the high reputation which it now holds in the London market. Scottish feeders recognise that it is the last quarter-hundredweight of beef they can put on their cattle at the finishing stage that regulates the price of the whole carcase, and consequently determines the ultimate profit. Animals to be disposed of profitably in Smithfield must be well finished; there is no demand for half fat or poorly finished beasts, these indeed can be more profitably disposed of elsewhere. As a rule, prime finished cattle are expected to dress 64 per cent. of live carcase weight, and the majority of the animals sold as prime Scotch make this average. Though a certain proportion of the fat cattle which are sold in the leading Irish markets may be classed as prime finished, the standard of finish is much below that of Scottish-fed beasts, hence it must be understood clearly that unless Irish feeders are prepared not only to be careful to maintain the quality of their cattle and to keep them in continuous growth, but to bring them to the desired degree of finish, the possibilities of developing a really profitable connection for Irish beef in the Smithfield Market are slight.



LORRIES WITH DEAD MEAT FOR THE LONDON MARKET AT RAILWAY STATION

The Transit to London. From what has been stated previously, it will be recognised that the lower cost of carriage for transporting the dead meat to market, as well as the advantage of having so much valuable offal for disposal, and the possibility of utilising it to great local advantage, gives good ground for hopefully regarding the feasibility of developing a dead meat trade in Ireland. At the same time it is apparent that adequate and suitable transit facilities from the carrying companies, and strict attention to the several features which have made the system so profitable to Scottish feeders for the disposal of their cattle are two of the most essential requirements for success.

PSEUDO-TUBERCULOSIS IN SHEEP (LYMPHO-ADENITIS)

(By permission of the New Zealand Government).

1. SERUM CULTURE

a) Front view of surface growth. (*b*) Back view, showing yellow zone.

2. BACILLI IN PUS-CELLS

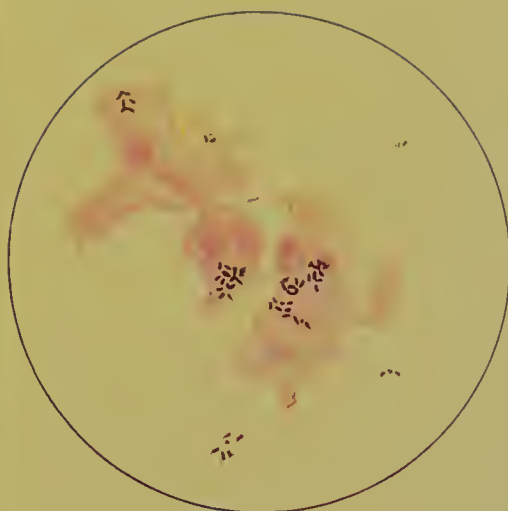
3. LUNG, EXPERIMENTAL CASE



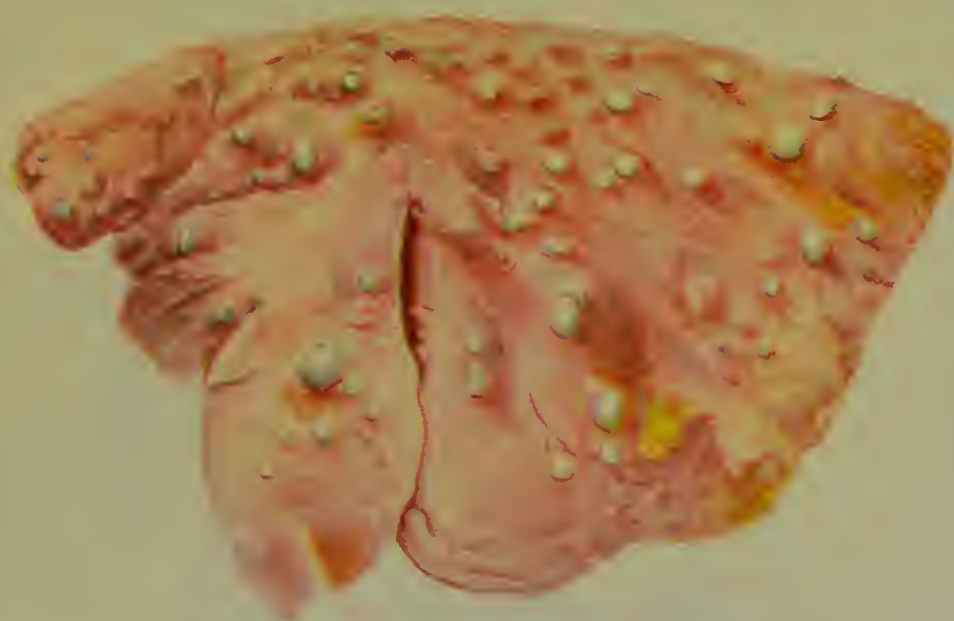
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25 JUL 1982

CHAPTER IX

EXPORT OF MEAT FROM HOLLAND

THE following extracts are from the regulations which govern the exporting of meat from Holland to Great Britain and Ireland. They contain many valuable hints and descriptions of procedures to which we commend the meat inspector's attention.

B. REGULATIONS REGARDING THE EXPORTATION OF MEAT TO GREAT BRITAIN AND IRELAND

(2) The inspectors shall refuse to pass meat destined for export to the United Kingdom of Great Britain and Ireland in cases of tuberculosis, on discovery :

General and every form of local tuberculosis in swine ;

Tuberculosis in ruminating animals :

(a) When there is miliary tuberculosis of both lungs ;

(b) When tuberculous lesions are present on the pleura and peritoneum ;

(c) When tuberculous lesions are present in the muscular system or in the lymphatic glands, embedded in or between the muscles ;

(d) When tuberculous lesions exist in any part of an emaciated carcase ;

(e) When any symptoms of infection of the blood, occurring shortly prior to the slaughter, are discovered, accompanied by a swelling of the spleen and lymphatic glands and miliary tubercles in the lungs, liver, spleen, or the kidneys ;

(f) When together with extensive tuberculous cavities the nutrition is impaired.

I

REGARDING THE MANNER OF SLAUGHTERING ANIMALS, THE MEAT OF WHICH IS SUBJECT TO INSPECTION

Article 1. (i) The killing shall take place by bleeding, in the case of horses, cattle, and pigs after stunning, or by applying apparatus by which immediate death is caused.

(ii) Pithing and breaking the neck are prohibited.

(iii) Only strong, skilled men selected by the owner or director of the slaughterhouse and approved by the Director-in-Chief of export meat inspection shall be allowed to stun animals or to apply the apparatus mentioned in (i).

(iv) Butchering, before death has visibly taken place, is not allowed.

Article 2. (i) In the case of pigs, the bristles are removed ; in the case of all other animals skinning takes place, in such a manner, however, that the skin remains attached to the animal at one place at least, if this is considered necessary by the inspector.

(ii) In accordance with regulations made by the Director or owner of the slaughterhouse, and approved by the Director-in-Chief of export meat inspection, the head, the legs, the intestines, and the udder shall be kept until the inspection is completed, in such a manner that no doubt can arise as to which animals they belong to, and so that the inspection can take place properly.

(iii) The lining membrane of the thorax and of the abdomen shall not be removed either entirely or in part.

(iv) Unnecessary incisions in butchering are prohibited.

Article 3. If, while butchering, the butcher discovers abnormalities, he shall at once acquaint the inspector.

Article 4. The transportation of slaughtered animals or parts thereof to other places before the inspection is completed, except by order of the Government Inspector, is prohibited.

II

REGARDING THE COMMUNES AND PLACES WHERE, AND THE TIMES AT WHICH, MEAT CAN BE SUBMITTED FOR INSPECTION

Article 7. There shall be a sufficient quantity of good water in readiness in the yard.

Article 8. The roadways connecting the building, those between the latter and the public street, and the free ground of the yard mentioned in Article 6, the latter to an extent of at least 1 metre in width measured from the outside wall of the slaughterhouse, shall be regularly paved, so that thorough cleansing can easily take place.

Article 9. (i) The flooring of the slaughterhouse and of the stables shall be impervious ; it shall show no crevices or unnecessary holes, and incline enough to allow the ready flowing-off of waste water, either direct or through open drains, to cesspools covered with removable grates, and provided with arrangements for excluding smell, from which it is carried away by means of a properly closed water-tight drain, or conducted to a water-tight well which is emptied at regular intervals.

(ii) The inside walls of the slaughterhouse shall be constructed of bricks, and to a height of at least $2\frac{1}{2}$ metres of glazed, impervious, and light-coloured bricks.

(iii) The ventilation shall take place by grates in the wall, by open windows, or by one or more ventilating shafts fixed in the roof.

(iv) The hall where the inspection takes place shall be constructed in such a manner that this inspection can be carried out during the day with closed doors and without artificial illumination.

Article 10. The slaughterhouse shall have no direct communication

with residences, eating-rooms, lavatories, meat-shops, places where meat products are prepared or where intestines or other animal products are dealt with, or with stores for offal of animal origin.

Article 11. The space within the slaughterhouse shall be large enough to allow for the proper carrying out of all necessary manipulations for butchering and also for the inspection.

Article 12. There shall be in the yard of the slaughterhouse, and at the disposal of the Government Inspector, an arrangement for rendering condemned meat harmless, and one or more rooms for carrying out the further inspection provided for in Article 22 (ii), for carrying out special investigations, for keeping the various utensils necessary for the inspection, and for the accommodation of the inspectors.

Article 13. (i) The carcasses of slaughtered and inspected animals should by preference be hung up in a place specially intended for this purpose; if this does not take place there shall be a strip of at least 3 metres in width between the places for slaughtering and for hanging up.

(ii) It is prohibited to hang meat up in the stables and to stable animals in the place intended for hanging up meat.

Article 14. Where the solid slaughterhouse refuse is not removed from the yard after every time that slaughter takes place, it is collected in a properly covered water-tight brick receptacle, and covered with caustic lime.

Article 15. (i) The yard, the pits, the halls, and all articles kept in these shall be regularly cleansed.

(ii) The slaughterhouse and the apparatus used shall be cleansed after every time that slaughter takes place.

Article 16. (i) The slaughter or hanging-up halls shall not be used for keeping clothes or offal of animal origin.

(ii) During slaughter and as long as meat is present, no other work shall take place in the slaughter or hanging-up rooms than that connected with the trade or with the inspection.

Article 17. The inspection shall take place between sunrise and sunset; in halls where, according to the decision of the Director-in-Chief, the artificial illumination is satisfactory, it can also take place between sunset and sunrise.

IV

CONCERNING THE RULES FOR THE INSPECTION, THE STERILISATION, THE RENDERING USELESS AS FOOD, AND THE DESTRUCTION

Article 25. (i) He that slaughters, or causes to be slaughtered, an animal shall render, or cause to be rendered, the auxiliary services required by the Inspection Official for the purposes of the inspection.

(ii) He shall allow this official to make incisions in, and to loosen organs or parts, or to do anything else with them for the purposes of the inspection.

Article 26. The inspection shall take place before and after slaughter.

Article 27. On inspection before slaughter it is determined :

(a) Whether the animal shows diseases or abnormalities which may influence the soundness of the meat.

(b) Whether symptoms are present of contagious diseases.

Article 28. In so far as may be necessary, attention should be paid to the following with regard to the animal to be slaughtered.

(a) The impression it makes as to the general state of its health and as to its nutrition ; (b) its attitude, gait, posture, glance, activity ; (c) the condition of the skin, especially in respect of temperature and hairiness ; (d) eventual disturbances of digestive and respiratory organs ; (e) the condition of the natural openings of the body, the nose, and in female animals the vagina and the udder ; (f) the temperature inside the body when the animal is suspected of being diseased.

Article 33. Animals showing symptoms of being diseased shall be marked.

Article 34. The Inspecting Official shall be present at the slaughter and inspect the animal as soon as possible after the slaughter.

Article 35. As regards the inspection in general the following regulations shall apply :

(a) The Inspecting Official shall see to all the stipulations of this Decree being complied with.

(b) He should perform his duties with thoroughly clean hands.

(c) He shall be provided with at least two thoroughly clean knives.

(d) Knives that have served for incisions in diseased or contaminated organs or parts shall not be used again before being thoroughly cleaned and disinfected.

(e) Care shall be taken that the inspection cannot lead to any sully-ing or contamination of the meat.

(f) The inspection shall be carried out with so much care that even small abnormalities are observed.

(g) When the lungs are cut into, various deep parallel incisions should be made. The heart is cut into by making a longitudinal incision on the right, and another on the left, by which the auricles and the ventricles are opened. After that an incision is made in the partition wall.

(h) The inspection of the lymphatic glands should take place by palpation, by viewing, and by making several longitudinal incisions.

Article 36. (i) When inspecting slaughtered animals :

(a) It should be observed whether there are abnormalities in the colour or outward appearance of the carcase in general, and of the various organs and parts in particular, and

(b) Whether the blood is abnormal.

(c) Palpation should take place of, and if necessary incisions made in, the tongue, the lungs, the heart, the liver, the spleen, the uterus, the bladder, the kidneys, and the udder.

(d) The heads of cattle and pigs should be inspected in such a manner that, the tongue being cut loose, the condition of the latter and of the

mouth and throat cavities can be observed, whilst the lymphatic glands belonging thereto should be carefully inspected.

(ii) Then inspection should take place of all the organs and their glands, the muscular tissue, the fat, the bones, and the joints.

(iii) If necessary, the cervical, thorical, iliac, lumbar, inguinal, pre-scapular, kneefold, and popliteal lymphatic glands must also be inspected.

Article 39. When inspecting immature calves, special attention shall be given to diseases of the lungs, the joints, the navel and the intestines.

Article 43. The Inspection Officials shall not pass meat for export :

(a) If it is meat of animals that have not been completely inspected.

(b) If on inspection any of the diseases mentioned in Article 47, except tuberculosis, are found to exist.

(c) In cases of tuberculous or other diseases, if such meat is condemned in the country of destination.

(d) In cases of bone fractures and important lesions or wounds of the skin and subcutis.

(e) When in pigs extensive skin affections are found to exist.

(f) If local processes or abscesses have been removed before inspection.

(g) When the meat has not been handled in a cleanly manner.

(h) In all cases in which serious doubt exists as to the fitness for export.

Article 44. (i) The Government Inspectors are authorised to pass for export the meat of animals suffering from local affections or abscesses, provided that

(a) Only the halves or quarters are passed which do not present any abnormalities, saving what is provided in the third sub-Article of the present Article.

(b) The affections or abscesses can be considered, either by infection, by intoxication, or in any other way, to have had no injurious influence on the soundness of the meat or on its power to resist decomposition.

(ii) When, in view of the provisions of the preceding sub-Article, the division of the carcase in halves or in quarters takes place, this shall be done in the presence of the Inspecting Official.

(iii) If the abnormalities mentioned in the first sub-Articles concern internal organs, the meat shall not be passed before the organs affected have been removed.

(iv) The Government Inspector shall state on the place in the mark which is intended for this purpose, the reason for the division into pieces.

Article 45. The Government Inspectors may refuse to pass meat for export :

(a) If the meat shows abnormalities in consistency, colour, odour, or taste, even if the cause of such abnormalities is known.

(b) If it is meat of very lean animals, and especially if there is a relation between the bad state of nutrition and the great age of the animals.

Article 46. When the meat cannot be passed for export, the Inspection shall be stopped and the meat marked and at once taken to the place for more minute examination.

Article 50. Where opportunities for sterilisation exist, conditional approval can take place of :

- (a) In cases of swine erysipelas : the meat which is not altered.
- (b) In cases of swine pneumonia and swine fever : the meat which is not altered, unless advanced emaciation has taken place.
- (c) In cases of tuberculosis, in the instances referred to in Article 47, 14 (d) and (e) ; the whole carcase, if the changed parts have as far as possible been cut out, or removed in another way, if no advanced emaciation exists, and if there is no acute miliary tuberculosis.

Article 52. (i) The Assistant Inspector is authorised to inspect the slaughtered animal :

- (a) If all the organs and parts are healthy.
- (b) If the following abnormalities or alterations exist :
 - (1) Animal parasites which are not harmful to the health of man.
 - (2) Local and not very extensive inflammations, even if these are accompanied by malformations of organs and suppurations, but no evil-smelling inflammation products are formed, the pus pockets are completely isolated from the surrounding tissues, and no contamination of healthy parts has taken place.
 - (3) Abnormalities in organs and parts which have not affected the general health and have not caused any alteration in the quality of the meat.
 - (4) Local tumours or (5) Local actinomycosis
 - (6) Tuberculosis of one organ, or of one organ with the lymphatic glands belonging to it, or, where tuberculosis is not limited to one organ, those forms in which the parts affected can easily be removed, no extensive softening of foci has taken place, and the disease is only present to a very small extent.

(ii) The Assistant Inspector shall not give a decision in the cases mentioned in (4), (5), and (6) unless on inspection it is found that the existing abnormalities have only slightly influenced the health and nutrition of the animal, or the quality of the meat.

Article 53. Sterilisation shall take place by steaming, by boiling, or by smelting.

Article 55. Steam sterilisation takes place by exposing the meat in pieces measuring at most 30 cm. in length and 10 cm. in thickness, for $2\frac{1}{2}$ hours, in apparatus constructed for the purpose, to the effect of steam under $\frac{3}{4}$ of an atmospheric pressure or 1 atmosphere.

Article 56. Boiling takes place by keeping the meat, cut up in pieces measuring at most 10 cm. in width and thickness, for at least $2\frac{1}{2}$ hours in boiling water.

Article 57. Smelting takes place in open boilers constructed for the purpose (the meat having previously been cut up in pieces of at most 1 cubic cm.), in such a manner that after having been completely reduced to a fluid it remains for at least 1 hour in that condition, unless before the lapse of that time a temperature of 100° C. is reached, when the Government Inspector may allow the smelting to terminate earlier.

Article 58. Meat is rendered useless :

(a) By using a destructor.

(b) By mixing it, after it has first been cut up in small pieces, with animal oils of disagreeable odour, lime, carbol, creoline, or other substances approved by the Director-in-Chief.

Article 59. Destruction of meat takes place by incineration in open fires, or in apparatus specially constructed for the purpose.

V

CONCERNING THE MANNER IN WHICH THE MEAT IS MARKED, AND THE ARRANGEMENT OF THE MARKS

Article 60. Marking shall take place in the case of live whole-hoofed animals, cattle, sheep, and goats, showing symptoms of disease, by painting on the back two red stripes crossing each other perpendicularly ; in the case of pigs by an earmark.

Article 61. The mark for dead meat for export consists of a label of buff, strong-lined paper, measuring $6\frac{1}{2}$ by $12\frac{1}{2}$ cm., and arranged as follows :

(a) Space for the name of the place of inspection, and for administrative information.

(b) Space for remarks by the Government Inspector.

If the meat intended for export is that of whole-hoofed animals, this is stated in the space (b).

Article 62. The mark shall be attached in the following manner, that is to say :

(a) In the case of whole animals, by piercing with a packing-needle the abdominal wall, near the navel, at about 2 cm. distance from the cutting surface, formed in butchering by cutting the abdominal wall of the animal along the linea alba, and by passing through the opening thus obtained a piece of galvanised wire to which the label is attached ; the ends of the wire are passed through a lead, which is subsequently pressed tight down by means of pincers, bearing on one inside the Government Arms, and on the other inside the letters U.K. (" Uitoever Keuring " —Export inspection) ;

(b) In the case of half carcasses, the mark shall be attached to the half submitted in the manner and on the place described in (a) ;

(c) In the case of quarters, the mark shall be attached in the manner described in (a), near the angle formed at the place where one of the cutting surfaces between a fore- and hind-quarter touches the linea alba ;

(d) In the case of preserved meat and of organs, or parts, mentioned in Article 22 (2), the mark is attached at a conspicuous place to the packing in the manner described in (a).

Article 63. Our Minister aforesaid is authorised to provide for meat to be marked in addition, by stamping, stencil, or branding marks, arranged in accordance with regulations to be made by him.

Article 64. (i) The mark referred to in Article 46 consists of a brass triangle, each side of which is 5 cm. long.

(ii) One of the flat sides of the triangle bears the word "Onthouden" (reserved).

(iii) The mark is attached at the place mentioned in Article 62, by means of a hook which is fastened in the upper angle of the other side.

Article 65. If on more minute inspection the animal be conditionally passed, the mark referred to in the preceding Article shall be removed and the following marks stamped on :

(a) In the case of cattle, sheep, and pigs : a rectangle with sides measuring $6\frac{1}{2}$ cm. and $3\frac{1}{2}$ cm., divided by two lines running parallel to the longest sides into three smaller rectangles, the upper space bearing the word "Rijksdienst" (Government service) and the name of the place of inspection, the centre space the date, and the lower space the word "Goedgekeurd" (Passed).

(b) In the case of whole-hoofed animals and goats : an isosceles triangle, the sides of which measure 5 cm. and the base of which rests on a rectangle with sides measuring $6\frac{1}{2}$ and 1 cm., the triangle bearing the word "Rijksdienst," the name of the place of inspection, and the word "Goedgekeurd," and the rectangle the date.

Article 66. If on more minute inspection the animal be conditionally passed, then the mark mentioned in Article 64 is removed, and the carcase stamped with a mark consisting of a circle with a diameter of 5 cm. in which are the letters V.G. ("Voorwaardelijk Goedgekeurd"—Conditionally passed).

Article 67. (i) The marks referred to in Articles 65 and 66 are stamped on each half of the carcase on the outside of the thigh, the middle of the back, the shoulder, the inner surface of the thigh, the navel region, and the middle of the rib wall.

(ii) Impressions are placed on such pieces and parts as the owner or his representative desires to have marked, and also on those on which the Inspection Officers consider it necessary to place them.

Article 68. If on more minute inspection the animal be condemned, the mark referred to in Article 64 shall be removed and the carcase stamped with a mark representing a parallelogram, the sides of which measure 5 and 4 cm., divided by a line running parallel to the longest side into two equal spaces, the upper one bearing the name of the place of inspection and the lower the word "Afgekeurd" (Condemned).

Article 69. The mark referred to in the preceding Article shall be stamped on at least ten places on each half of the carcase.

CHAPTER X

THE PUBLIC HEALTH AND UNSOUND FOOD

ON September 16, 1908, there was issued by the L.G.B. a series of Regulations under the Public Health (Regulations as to Food) Act, 1907, these Regulations having been framed "with the object of securing that the articles of food which are unsound, unwholesome, or unfit for human consumption, and which as part of the cargo of a ship are brought to a place in this country, either as a place of destination or as a place of deposit for transmission to a place of destination elsewhere in the United Kingdom, shall be dealt with at the port of discharge." Such a procedure, it is pointed out, "is necessary for the prevention of danger to the public health from the consumption of unsound or unwholesome food. Inspection of articles of food for this purpose has for many years been carried out with satisfactory results by the Port Sanitary Authority in the Port of London, and more recently also in the Port of Manchester. The experience gained in these ports has been utilised by the Board in preparing these Regulations, which enable action to be taken with regard to unsound food in all port sanitary districts and in all municipal boroughs and urban and rural districts which include or abut on any part of a Customs Port which part is not within the jurisdiction of a Port Sanitary Authority." The Regulations referred to are as follows :

Date on which the Regulations take effect. "The Regulations will take effect on and after October 1, and in the interest of public health and of uniformity of administration it is desirable that the arrangements which are necessary to give effect to them should be made at an early date in all the districts to which they apply."

Inspection. "Powers of inspection for the purposes of the Regulations are conferred upon the Medical Officer of Health, or any duly qualified medical practitioner appointed or employed by the Sanitary Authority to act in the execution of the Regulations, and upon any other person appointed or employed by the authority under the Regulations to exercise any powers or discharge any duties assigned to the Medical Officer of Health. The appointment and payment of such persons, with the consent of the Board, is authorised by Article XI. of the Regulations.

"In applying to the Board in connection with any appointment under his provision a statement should be furnished showing the experience in food inspection possessed by the proposed officer, and whether he has

obtained any special qualification such as the certificate in regard to meat and food inspection of the Royal Sanitary Institute.

“As regards the powers and duties to be assigned to any such officer, it may be observed that the Board consider it advisable that notices or certificates in writing should only be given by the Medical Officer of Health, or by an officer acting in the place of, or as assistant to, the Medical Officer of Health.”

Place and Method of Inspection. “The Medical Officer of Health is authorised by Article IV. to examine articles of food which have been landed within the district of the Sanitary Authority. If the circumstances, in his opinion, so require, he may also examine such articles before they have been landed. In this connection, reference should be made to the paragraph below headed ‘Communication with Customs Officers.’

“The same article provides for necessary facilities being given for the purposes of his examination in the matter of convenient arrangement, unpacking, and the like, and Article VI. authorises him to apply to a Justice for a warrant to enter premises in special cases.

“The Board consider it important that in determining the place and manner in which examination is made, the Medical Officer of Health should give full consideration to the circumstances in which particular foods are brought into or deposited within the district. It will be his object not only to examine under the conditions which are most favourable to efficient inspection, but in the case of perishable articles and food-stuffs in course of transit so to conduct the examination as to avoid any needless detention of goods or unnecessary inconvenience to the traders concerned.

“Inspection of food-stuffs should in ordinary cases be made after they have been landed. Exercise of the powers of inspection on the ship or on lighters and barges may, however, be a matter of importance in special cases, as where the vessel discharges a cargo of food-stuffs overside.”

Taking of Samples. “In order to meet the case of particular consignments in which it is necessary that special examination should be made (*e.g.*, in the laboratory), powers of sampling are conferred by Article VIII. The Board consider it important that samples of food-stuffs, which themselves possess a material money value, should be taken only in cases where there is substantial reason for this course, and would recommend that a record should be kept of the nature and method of disposal of any such samples. Vouchers in respect of samples taken under this Article should be supplied in all cases on the request of the owner or other person having charge of the goods.

“Article VIII. also provides for the temporary detention of consignments pending the completion of the examination of the samples taken. Such detention should, however, not be regarded as a necessary consequence of taking samples.”

Communication with Customs Officers. “Attention is drawn to Article XIV. (2), which provides that in certain circumstances the examination of an article of food by an officer of the Sanitary Authority

shall not be made without the consent of the Officer of Customs. The Officer of Customs is, however, required to afford facilities for such examination, and the Board would suggest that the Medical Officer of Health should confer from time to time, as circumstances require, with the Collector or other Chief Officer of Customs acting in his district, so as to secure co-operation between the officers concerned."

Procedure in Connection with Unsound Food. "Under Article IV. the Medical Officer of Health is empowered, himself or by an assistant, to seize and carry away an article of food which, in his opinion, is unsound or unwholesome, or unfit for human consumption, in order that application may be made to a Justice for an order of condemnation. Alternatively, the Medical Officer of Health, by notice to the importer or to any other person having charge of the article, may require that until it has been examined by a Justice it shall not be removed from the place specified in the notice without the permission of the Medical Officer of Health. Such notice, however, does not preclude the removal of the food in question, at the request or with the consent of the importer, and with the permission of the Medical Officer of Health, for the purpose of its destruction or for the application of a process which will effectually prevent the article from being used for human consumption.

"In order that Revenue interests may not be jeopardised, dutiable articles in Customs charge should not be seized or removed without reference to the Local Customs Authorities.

"The Justice, if satisfied as regards the unsoundness of the particular food concerned, is required by Articles V. and VI. to condemn the food and order its destruction or its disposal under the supervision of the Medical Officer of Health by such means and in such a manner as to prevent its being used for human consumption. If, however, evidence satisfactory to the Justice is adduced that the food in question, although unsound, is not intended for sale for human consumption, he is required to make an order dismissing the complaint. A description of the food in question is to be given in any such order of dismissal, and a copy of the order is to be furnished to the Sanitary Authority.

"The Board consider it important that the Medical Officer of Health, in determining the place to be specified in any notice, and in taking other action in regard to food ascertained or suspected to be unsound, should keep in mind considerations such as those above specified in the third paragraph of the observations under the heading 'Place and Method of Inspection.' In the case of any articles which he has seized and carried away, it is desirable that he should afford all facilities which the circumstances may permit to the importer who wishes to make his own examination of the foods in question."

Records and Reports. "Article VII. requires the Sanitary Authority to keep for a period of not less than twelve months a record of any article of food destroyed or disposed of in pursuance of the Regulations. In this connection the Board would suggest that an abstract of these records should be furnished by the Medical Officer of Health in his Annual Report

to the Authority, which should also include an account of proceedings which have been taken by him, or under his direction, during the year to give effect to the Regulations.

"The Sanitary Authority will no doubt wish to accede to reasonable applications by importers for documentary evidence that particular foods or consignments have been destroyed or disposed of."

Provision for Determination of Differences, &c. "Article XIII. empowers the Board, on the application of all the parties affected, to determine, either as arbitrators or otherwise, any difference arising in relation to any subject-matter of, or anything done under, the Regulations."

Communication in Special Cases with the Board. "With a view to securing greater efficiency and uniformity of inspection under these Regulations, and of taking any necessary action in the interests of the country as a whole, the Board would be glad at any time to receive information in cases where, as a result of examination of foods under the Regulations, special danger to the public health is apprehended, or the foods have been found to present unusual or suspicious characteristics."

THE PUBLIC HEALTH (FOREIGN MEAT) REGULATIONS, 1908

Object of the Regulations. "The Board have given attention to the danger to public health entailed by the unrestricted importation of certain kinds of meat foods, and to the circumstance that equitable and efficient administration by local authorities in respect of disease and unsoundness in meat may be seriously hampered by such importation.

"The Regulations are designed to deal with foreign boneless meat which is imported in the form of scraps, trimmings, or other pieces not sufficiently identifiable with definite parts of a carcase, and which has not before importation been made ready for human consumption in the form of a sausage, or of another prepared or manufactured article of food; with imported tripe, tongues, or kidneys to which certain chemical preservatives have been applied; and with severed parts of a pig not prepared before importation as bacon or ham, and not contained in a package with an 'official certificate' of the kind referred to below unopened on it or attached to it. These meats are classed together in the Regulations as 'Foreign Meat of Class I,' and unless the importer of meat of this class exports it at his own expense, or furnishes proof, in the manner prescribed by the Regulations, that it is not intended for sale for human consumption, the meat is required to be destroyed.

"With a view to stopping the importation of carcasses of pigs from which the lymphatic glands about the throat and elsewhere are absent (thereby preventing the detection of evidence of tuberculosis and other disease in the carcase), the Regulations provide that carcasses of pigs, not prepared as bacon or ham, which are imported without the lymphatic glands, and from which the head has been removed (Foreign Meat of Class II.) shall be dealt with in a similar manner to Foreign Meat of Class I.

“ Foreign Meat of Class III. consists of the severed parts of a pig, not prepared as bacon or ham, and not being Foreign Meat of Class I., but contained in a package with an ‘ official certificate ’ attached as evidence that the pig from which the meat is derived has been certified by a competent authority in the place of origin to be free from disease at the time of slaughter, and that the meat has been certified by the like authority to have been dressed or prepared, and packed with the needful observance of all requirements for the prevention of danger arising to public health from the meat as an article of food. After the necessary communications with the responsible authorities of the countries concerned, the Board will take the steps contemplated by Article I. (*h*) of the Regulations to define and publish the ‘ official certificates ’ which are to be accepted for this purpose.

“ A further object of the Regulations is to provide means by which foreign meat generally which is diseased, unsound, unwholesome, or unfit for human consumption may be detected and dealt with by public health authorities at the place of importation.

“ The Regulations will take effect on and after January 1, 1909, and in the interests of public health and of uniformity of administration it is desirable that the arrangements which are necessary to give effect to them should be completed before that date in all the districts to which they apply.”

Inspection. “ Powers of inspection for the purposes of the Regulations are conferred upon the Medical Officer of Health, or any duly qualified medical practitioner appointed or employed by the Sanitary Authority to act in the execution of the Regulations, and upon any other person appointed or employed by the authority under the Regulations to exercise any powers or discharge any duties assigned to the Medical Officer of Health. The appointment and payment of such persons, with the consent of the Board, is authorised by Article XV. of the Regulations. It is desirable that, as far as possible, applications to the Board in this matter should also include applications which may be required in respect of the appointment of officers for the purpose of the Public Health (First Series : Unsound Food) Regulations, 1908.”

Procedure under the Regulations. “ The Regulations required by Article III. (2) that the Officer of Customs shall cause to be detained, for examination by the Medical Officer of Health of the Sanitary Authority, any foreign meat which according to the best opinion which, in the circumstances of the case, his knowledge enables him to form has the characteristics of foreign meat of either Class I. or Class II.

“ If he finds that the cargo comprises Foreign Meat of Class III. or Foreign Meat Unclassed he may allow it to be removed unless he is of opinion that the meat requires examination by the Medical Officer of Health.

“ It will be the duty of the Medical Officer of Health, on being informed by the Customs Officer of the detention, to examine the meat and to give either a notice forbidding its removal for any purpose other than

exportation, or a certificate that it may be removed. But he is not to give a certificate and must give a notice as regards Foreign Meat of Class I. or Class II., and also as regards Foreign Meat of Class III. or Foreign Meat Unclassed if it is, in his opinion, notwithstanding the official certificate, diseased, unsound, unwholesome, or unfit for human consumption.

"The Regulations as to the action to be taken where he gives a notice of the kind referred to will be found in Articles VI. to IX.

"Article X. requires a record to be kept of foreign meat destroyed, and Article XII. enables the Medical Officer of Health to take samples of foreign meat for the purpose of the Regulations. He is to dispose of the samples in such manner as the Sanitary Authority direct.

"It will be observed that under Article IV. the Medical Officer of Health is empowered to examine any foreign meat which is still in the district ; even though its removal from the ship, or from the place of delivery or of landing may have been allowed, and that if he is of opinion that it should not be removed to a place of destination for any purpose other than exportation, he is to give notice forbidding its removal except for exportation.

"Article XVII. empowers the Board, on the application of all the parties affected, to determine, either as arbitrators or otherwise, any difference arising in relation to any subject-matter of, or anything done under, the Regulations."

REGULATIONS UNDER THE PUBLIC HEALTH (REGULATIONS AS TO FOOD) ACT, 1907

Following upon the publication of the preceding Regulations, a further circular, under date December 12, 1908, was issued by the L.G.B. drawing attention to further matters in connection with administration under those Regulations. The circular is quoted at length :

"The following observations relate to the detention and examination of meat suspected to be comprised in the definitions of Foreign Meat of Class I. and Class II."

Boneless Meat and "Boxed" Meat. "The kind of boneless meat which is comprised in 'Foreign Meat of Class I.' is described in the Regulations as follows :

" 'Scrap meat, namely, meat which, whether it is fresh or has, before importation, been subjected to a process of freezing or other refrigeration, or to chemical or other treatment, with or without the addition of any preservative or colouring substance :

" ' (i) consists of scraps, trimmings, or other pieces of such shape or in such condition as to afford insufficient means of identification with definite parts of a carcase ;

" ' (ii) has not, before importation, been made ready for human consumption in the form of a sausage, or of another prepared or manufactured article of food ; and

" ' (iii) is without bone in its natural state of attachment.' "

"The boneless meat coming within the above description which has hitherto come to the United Kingdom has occasionally been imported in barrels or other packages in a fresh condition, or preserved by means of boric acid and other preservatives. Sometimes it has been imported frozen in bags. Most of it, however, has been imported in boxes in the frozen state from the United States, New Zealand, Australia, and Argentina.

"Imported frozen meat in boxes ('boxed meat') may, however, comprise varieties of meat which do not fall within the above description of boneless scrap meat.

"For example, boxed meat such as is ordinarily known in the trade by the following terms is usually of this character :

Ox cheeks.	Boston butts (pork).
Ox skirts.	B.H. butts (pork).
Ox tails.	Shoulder butts (pork).
Pork bellies.	Fat backs (pork).
Pork loins.	

Also practically all boxes containing organs, such as kidneys, livers, sweetbreads, plucks, and hearts.

"On the other hand, boxed meat as hitherto imported under the trade terms noted below (among other terms) obviously falls within the above description of boneless scrap meat :

Beef trimmings.	Oxford meat.
Boneless beef.	Cheek meat.
Boneless ox-beef.	Pork trimmings.
Boneless cow-beef.	Ham trimmings.
Boneless bull-beef.	Sausage-meat (other than
Boneless veal.	sausages).
Lean pork meat.	

"Some boxes of boneless beef and other boneless meat are said to contain only certain definite, classified, 'cuts' of one and the same kind. These boxes are usually marked to that effect. Boneless chucks, boneless butts, and boneless chuck butts, which have hitherto been imported in some quantity from the United States, are usually imported in boxes marked in that way, as also boxes of 'cuts' which have less frequently come to the English market under such names as Stripped loins, Shoulder clods, Thick flanks, Rump butts, Tenderloins, Boneless shoulders, Boneless legs (mutton), &c.

"'Classified' boneless meat of this kind, *as hitherto imported*, in the majority of instances falls within the description of boneless scrap meat in the Regulations. The pieces of meat have been packed tightly together and form a solid mass, moulded to the shape of the box, which it is impossible to examine satisfactorily ; while often the individual pieces, when separated from the mass, are so rolled and folded that satisfactory identification in the frozen state is impracticable.

"It has, however, been represented to the Board that new methods of packing these 'classified' cuts are being introduced, with a view to

obviating these objections. In any case in which such new methods are adopted, and indeed in regard to boxed boneless meat generally, it will be desirable that the Medical Officer of Health, before giving a certificate which permits the removal of the meat, should satisfy himself that the following conditions are complied with :

“(a) that the pieces of meat contained in the box are so packed that on opening the box the pieces can be individually separated and examined ;

“(b) that any piece so examined is of such a nature that it can satisfactorily be identified with the parts of the carcase which the box is stated to contain.

“If ‘classified’ boneless meat is imported which does not comply with these conditions it should be dealt with like other forms of boneless scrap meat, by notice forbidding its removal for purposes other than exportation.

“The above considerations in regard to meat imported in boxes also apply to meat imported in bags, barrels, or other packages.”

Boxed Pork and Other Pork imported in Portions less than the Entire Carcase. “Consignments of imported pork, in portions less than the whole carcase, will come under the category of Foreign Meat of Class I. unless they are accompanied by an ‘Official Certificate’ as evidence that the pig from which the meat is derived has been certified by a competent authority in the place of origin to be free from disease at the time of slaughter, and that the meat has been certified by the like authority to have been dressed or prepared, and packed with the needful observance of all requirements for the prevention of danger arising to public health from the meat as an article of food. After the necessary communications with the responsible authorities of the countries concerned are completed, the Board will issue a schedule of accepted Official Certificates in the *London Gazette*, and communicate further with the Sanitary Authority. After publication of this schedule, Customs Officers will detain for the examination of the Medical Officer of Health imported meat which appears to consist of pork in portions less than the entire carcase, or packages containing such pork, if the pork or the packages do not bear a stamp or label specified in the schedule as accepted Official Certificates. If his examination shows this to be the case, notice forbidding the removal of the pork for any purpose other than exportation should be given.”

Tripe, Tongues, and Kidneys. “Imported tripe, tongues, and kidneys are liable to detention by Officers of Customs in order that the Medical Officer of Health may make the examination necessary to show whether these articles fall into the category of Foreign Meat of Class I. in consequence of the presence of preservatives.

“It is desirable that the Authority should forthwith make arrangements with the public analyst of the district for chemical examination and report on samples of tripe, tongues, kidneys, or the liquor in which these articles are contained. Any such reports should be preserved for

reference in connection with samples of subsequent consignments from the same person or firm.

“Attention should specially be directed to tripe, tongues, and kidneys imported in ‘sweet pickle’ or ‘patent pickle.’ Tripe, tongues, and kidneys imported in the frozen state will not be detained by Customs Officers in the absence of a special request from the Medical Officer of Health.”

Carcases of Pigs. “The carcasses of pigs which are not imported whole, with the head in its natural state of attachment, and with lymphatic glands about the throat and elsewhere *in situ* come under the category of Foreign Meat of Class II. Carcasses which the Medical Officer of Health ascertains to belong to this class are required to be dealt with by notice forbidding their removal for any purpose other than exportation, as in the case of Foreign Meat of Class I.

“The Board of Customs will instruct their officers to detain carcasses of pigs for examination by the Medical Officer of Health, on receipt of intimation from that officer that he desires to examine carcasses which arrive from a specified country or port of shipment, or particular consignments of carcasses. Requests for detention should contain particulars sufficient for the identification of the carcasses by the Customs officials. It will usually be practicable for the Medical Officer of Health also to examine pig carcasses for the purpose of the Regulations without first requesting formal detention by Customs Officers.

“If the presence of tuberculosis in any degree is discovered in pig carcasses as a result of examination by the Medical Officer of Health, the whole carcase should, in accordance with the recommendation of the Royal Commission on Tuberculosis, 1896, be regarded as unfit for human consumption.”

Procedure in Relation to Meat detained by Officers of Customs.

“With a view to minimise delay and avoidable inconvenience to the trade interests concerned, the Board of Customs will instruct their officers to send wherever possible telegraphic or telephonic messages in advance of the formal notice acquainting the Medical Officer of the detention or intended detention of imported meat, and to give these officers the further instruction that in naming the place of temporary detention where the meat is to await inspection by the Medical Officer of Health due regard is to be given to the convenience of importers and others concerned. It is desirable that the Medical Officer of Health, and other officers of the authority acting in execution of these Regulations, should be guided by similar considerations, and should confer for the purpose as may be necessary with the Chief Officer of Customs at the port.”

Foreign Meat which is Diseased, Unsound, Unwholesome, or Unfit for Human Consumption. “Attention is drawn to the provisions of Article V. of the Regulations, by which a notice forbidding removal for any purpose other than exportation is required to be given by the Medical Officer of Health in respect of any Foreign Meat of Class III. or Foreign Meat Unclassed submitted to him for examination under the Regulations,

if such meat is ascertained to be diseased, unsound, unwholesome, or unfit for human consumption. Apart from this provision and from any communication received from Officers of Customs in respect of foreign meat, the examination of imported meat generally should be included in the ordinary course of food inspection which the Sanitary Authority has been authorised to make by the Public Health (First Series : Unsound Food) Regulations, 1908.

"As stated in the previous circular regarding these Regulations, the Board consider it important that in determining the place and manner in which the examination is made, the Medical Officer of Health should give full consideration to the circumstances in which particular foods are brought into or deposited within the district. It will be his object not only to examine under the conditions which are most favourable to efficient inspection, but in the case of perishable articles and food-stuffs in course of transit so to conduct the examination as to avoid any needless detention of goods or unnecessary inconvenience to the traders concerned. In case of any meat which has been seized and carried away under the Regulations, it is important that he should afford all facilities which the circumstances may permit to the importer who desires to make his own examination of the meat. Reasonable applications by importers for documentary evidence that particular meats have been destroyed or otherwise disposed of under the Regulations should be acceded to.

"The Board are anxious to secure uniformity in the administration of the Regulations at the various ports of entry and will be glad to assist in any way they can where the Medical Officer of Health draws their attention to any cases of difficulty which may hereafter arise."

Appointment of Assistant Officers, &c. "In districts in which Assistant Officers will be wanted for the purpose of the Foreign Meat Regulations (Article XV.), steps should be taken to obtain the Board's consent to the appointment at an early date, and suitable forms will be forwarded on application. In the case of ports where foreign meat is habitually imported, details should be given of the qualifications in regard to meat inspection possessed by any person to whom the Sanitary Authority propose to assign duties under these Regulations. The Medical Officer of Health should inform the Chief Officer of Customs of the port of the appointment of Assistant Officers."

From a third circular issued from the office of the L.G.B. on January 26, 1909, the following extracts are taken :

"The Board have given consideration to communications received from the responsible authorities of certain British Dominions and Foreign Countries in which pork is inspected by officers authorised by the Governments concerned before being exported to this country. They have now caused to be inserted in the *London Gazette* of January 22, 1909, a notice containing a schedule of labels and marks declared to be admissible as Official Certificates in respect of Foreign Meat which consists of pork, or other edible parts of the pig, which has been subjected to inspection

in the following countries : Denmark ; the Netherlands ; the Dominion of Canada ; the Dominion of New Zealand.

“ A copy of the notice in the *London Gazette*, which describes the labels and marks thus scheduled and specifies certain conditions attaching to their acceptance, is attached to this Circular (Appendix I.). Brief descriptions or illustrations of the accepted labels and marks are also attached (Appendix II.). It will be observed that the Certificate in the case of the Netherlands is admissible only until May 1, 1909.”

Significance of Official Certificates in the Administration of the Regulations. “ The specification as Official Certificates of the labels and marks now scheduled will, it is believed, facilitate the work of the Medical Officer of Health at all ports at which pork is imported, and, in the case of pork imported in the form of entire carcasses, it is anticipated that the Medical Officer of Health, by ascertaining whether the carcasses bear any of these specified labels or marks, will obtain a valuable indication as to the extent of examination which it is necessary to make of them under the Foreign Meat Regulations.

“ It should, however, be understood that the fact that an Official Certificate accompanies carcasses of pigs, or any other kind of imported pork, does not exempt the meat from liability to examination. All meat, even if officially certified, which is imported in the form of scrap meat, or which, in the opinion of the Medical Officer of Health, is diseased, unsound, unwholesome, or unfit for human consumption should be dealt with in the manner prescribed by the Regulations (*see* the Board's Circular, Foreign Meat, No. 2, of December 12, 1908). Similar considerations apply to carcasses of pigs which are imported without the head in its natural state of attachment and without the lymphatic glands about the throat and any other part of the carcass in their natural position.

“ The Board will be glad to receive information from Medical Officers of Health of any instances in which it is necessary to take action, for the above reasons, in regard to any officially certified meat.”

“ Boxed ” Pork and other Pork imported in Portions less than the Entire Carcase without an Official Certificate. “ Under the provisions of the Public Health (Foreign Meat) Regulations, 1908, Officers of Customs will detain for examination by the Medical Officer of Health imported meat which appears to fall within the category of Foreign Meat of Class I. (c), *i.e.*, pork or other edible parts of the pig (not being prepared as bacon or ham) which is in portions less than the entire carcass, and which is not accompanied by a label or mark which has been specified in the *London Gazette* to be admissible as an Official Certificate.

“ Edible parts of the pig include edible ‘ offal,’ such as pigs’ tongues, pigs’ kidneys, pigs’ plucks, pigs’ hearts, pigs’ livers, and pigs’ feet. It is desirable that the Medical Officer of Health should furnish the Chief Officer of Customs at the port with any information which may be necessary to ensure the detention for examination by the Medical Officer of Health of consignments of this kind.

“ The Regulations require that where the Medical Officer of Health

has ascertained, by notice received from an Officer of Customs or otherwise, that any imported meat comes within the category of Foreign Meat of Class I. (c), he should give a notice forbidding the removal of the meat for any purpose other than exportation (*see* Article III. (5) and Article V.). If an importer to whom a notice of the kind above-mentioned has been given desires not to export the meat, but to use it for some purpose other than sale for human consumption, the procedure to be adopted to enable him to do so is provided in the Regulations (Articles VI. and VIII.).

“ APPENDIX I

“ *Notice inserted in the ‘ London Gazette ’ of January 22, 1909*

“ THE PUBLIC HEALTH (FOREIGN MEAT) REGULATIONS, 1908

“ WE, THE LOCAL GOVERNMENT BOARD, in pursuance of the Public Health (Foreign Meat) Regulations, 1908, hereby give notice that, for the purposes of those Regulations, each Official Certificate of which the details are set forth in any representation or design or in any verbal description comprised in the Schedule appended to and forming part of this Notice is, subject to such instructions as are comprised in the notes subjoined to the representation or design or verbal description, hereby declared, in relation to each country of which, as a place of origin, the name is prefixed as a heading to that representation, or design, or verbal description, to be admissible, in the case of the Official Certificate which relates to the Netherlands, during the period beginning on the First day of October, One thousand nine hundred and eight, and ending on the First day of May, One thousand nine hundred and nine, and, in the case of an Official Certificate which relates to any other country, during the period of twelve months beginning on the First day of October, One thousand nine hundred and eight, in the manner, to the extent, and subject to the rules and conditions prescribed in this Notice, as evidence that the pig from which any foreign meat is derived has been certified by a competent authority in the place of origin to be free from disease at the time of slaughter, and that the meat has been certified by the like authority to have been dressed or prepared, and packed with the needful observance of all requirements for the prevention of danger arising to public health from the meat as an article of food :

“ AND FURTHER, with respect to the manner, to the extent, and to the rules and conditions in, to, and subject to which every Official Certificate is admissible as evidence for any such purpose as is hereinbefore described, we hereby prescribe as follows, that is to say :

“ (i) An Official Certificate used in relation to foreign meat, or in relation to a box, case, receptacle, or package containing foreign meat shall be admissible as aforesaid only where the meat is derived from a pig.

“ (ii) An Official Certificate in the form of a label shall be admissible as aforesaid only where the label is securely affixed or attached

to any foreign meat, or to any box, case, receptacle or package containing foreign meat ; and where the label so affixed or attached has not, in any other circumstances, or on any other occasion, been used as an Official Certificate.

“(iii) In this Notice, any word or expression to which a special meaning is assigned by the Public Health (Foreign Meat) Regulations, 1908, has the same meaning as in those Regulations.

“ SCHEDULE

“ *Places of Origin and Official Certificates*

“ DENMARK

“ 1. A label according to the subjoined representation or design and verbal description, that is to say : ”

(*Copy of Label here inserted. See p. 1597.*)

“ NOTE. In the use of any label according to this representation or design, the space occupied by the number (17) in the representation or design may be filled in with any other figure or figures corresponding to the registered number of the slaughterhouse, or other building or place at which the meat has been inspected.

“ *Verbal Description*

“ A slip of cardboard, or of other suitable material, bearing in red ink, within an oblong frame having curvilinear ends, the word ‘ Danmark ’ above a scroll formed of four Lurer or antique trumpets, and the registered number of the slaughterhouse, or other building or place at which the meat has been inspected, and also below the said frame, the date and the signature of an authorised officer, followed by the words :

“ ‘ Dyrlægge, autoriseret i Henhold til Lov af 27 Maj 1908.’ ”

“ 2. A mark according to the subjoined verbal description, that is to say :

“ *Verbal Description*

“ A device impressed on the meat in red colour, and comprising within an oblong frame having curvilinear ends the word ‘ Danmark,’ above a scroll formed of four Lurer or antique trumpets, and the registered number of the slaughterhouse or other building or place at which the meat has been inspected.”

(*Copy of Mark shown on p. 1597.*)

“ NETHERLANDS

“ A label according to the subjoined representation or design and verbal description, that is to say : ”

(*Copy of Labels here inserted. See Appendix II.*)

“ NOTE. In the use of any label according to this representation or design, the spaces occupied by the figures and word ‘ II-Oss,’ and by the letters and figures ‘ aw No. 2466 ’ will be filled in with

NETHERLANDS LABELS.

FRONT OF LABEL

	II. Oss.	a w. N ^o 2466	 N E D E R L A N D. Vleesch voor uitvoer goedgekeurd overeen- komstig het Koninklijk besluit van 21 November 1902 (<i>Staatsblad</i> n ^o 199). Datum: 190 .. <i>De Rijkskeurmeester</i> Naam:

Completed with the registered number of establishment, name of district serial number, (e g II. Oss. a w N^o 2466 in specimen) date, and signature.

NETHERLANDS LABEL.

FRONT OF LABEL

	Oss. II	a. N ^o 9217	 N E D E R L A N D. Vleesch voor uitvoer goedgekeurd overeen- komstig de Wet op de uitvoerkeuring van vleesch 1907 (<i>Staatsblad</i> n ^o 217) en het Koninklijk Besluit van 24 Juni 1908, n ^o 50. Datum: 190 .. <i>De Rijkskeurmeester.</i> Naam:

Completed with the registered number of establishment, name of district, serial number, (e g Oss. II a N^o 9217 in specimen) date, and signature

substituted figures, words, and letters, denoting the slaughterhouse or other building or place at which the meat has been inspected, and other particulars required for administrative information.

“ Verbal Description

“ A slip of cardboard, or of other suitable material, containing the under-mentioned particulars :

“ Obverse

“ The Royal Arms, the number or name of the slaughterhouse, or other building or place at which the meat has been inspected, a serial number, the signature of an authorised officer, and the words :

“ NEDERLAND

“ Vleesch voor uitvoer goedgekeurd overeenkomstig het Koninklijk besluit van 21 November 1902 (*Staatsblad* no. 199).

“ Datum 190 .

“ *De Rijkskeurmeester.*

“ Naam :

“ Reverse

“ The words : ‘ Meat inspected for export to the United Kingdom of Great Britain and Ireland, according to the Dutch Royal decree of 21 November 1902.’

“ or

the words : ‘ Meat inspected for export according to the Dutch Royal Decree of 21 November 1902.’

“ ‘Fleisch zur Ausfuhr untersucht laut Nielerländischen Königlichen Verordnung vom 21 November 1902.’

“ ‘ Viande déclarée propre à l’exportation en vertu de l’Arrêté Royal Néerlandais du 21 Novembre 1902.’

“ Also a crossing in the form of two parallel straight lines within which are the words :

“ ‘ For export to the United Kingdom of Great Britain and Ireland.’

“ DOMINION OF CANADA

“ A label of suitable material and otherwise in accordance with the subjoined verbal description, that is to say :

“ A printed form containing the undermentioned particulars :

“ DOMINION OF CANADA

“ Department of Agriculture

“ Certified to be from carcasses free from disease, and prepared and packed under supervision.

“ (a)

“ (b)

“ NOTES. (a) To be filled in with the name or registered number of the slaughterhouse, or other building or place at which the meat has been inspected.

“(b) To be filled in with the signature of the Inspector responsible for the Certificate.

“DOMINION OF NEW ZEALAND

“A label of suitable material and otherwise in accordance with the subjoined verbal description, that is to say :

“A printed form containing the undermentioned particulars :

E. $\left\{ \begin{array}{c} \text{Design} \\ \text{of} \\ \text{Crown.} \end{array} \right\}$ R.

“NEW ZEALAND

“*Department of Agriculture. Veterinary Division*

“Certified to be from carcasses free from disease, and prepared and packed under supervision.

“(a)

“(b)

“NOTES. (a) To be filled in with the signature of the Inspector responsible for the Certificate.

“(b) To be filled in with the name or registered number of Meat Export Slaughterhouse, or other building or place at which the meat has been inspected.

“Given under the Seal of Office of the Local Government Board, this twenty-second day of January in the year One thousand nine hundred and nine.

“JOHN BURNS, President.

“S. B. PROVIS, Secretary.

L.S.

“APPENDIX II

“*Short Description or Illustration of Labels or Marks declared in the ‘London Gazette’ of January 1909, to be admissible as Official Certificate*

“NEW ZEALAND LABEL

“Label bearing particulars as follows :

E. $\left\{ \begin{array}{c} \text{Design} \\ \text{of} \\ \text{Crown.} \end{array} \right\}$ R.

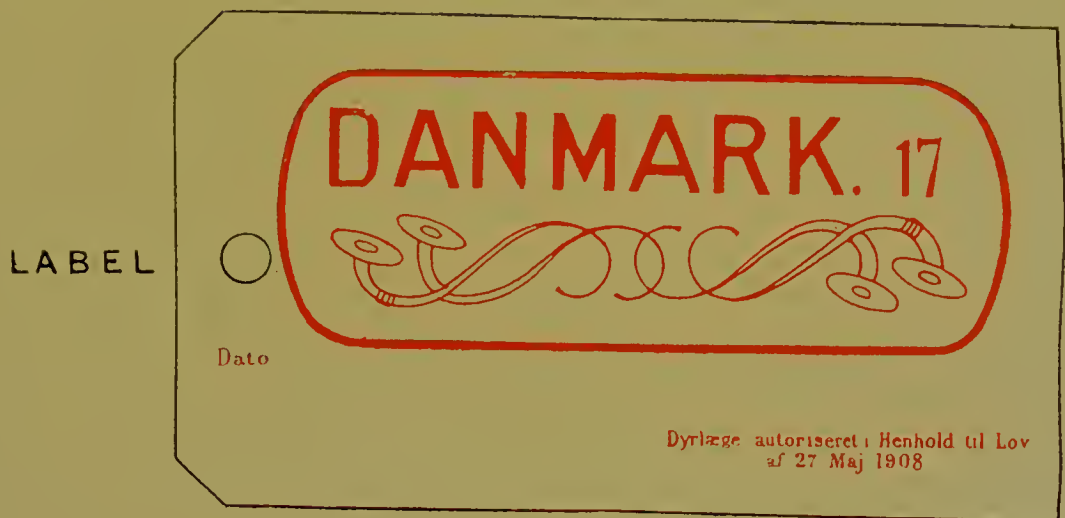
“NEW ZEALAND

“*Department of Agriculture. Veterinary Division*

“Certified to be from carcasses free from disease, and prepared and packed under supervision.

“*Completed with name or registered number of establishment and signature.*”

DANISH LABEL AND MARK.



Completed by the addition of registered number of establishments (e.g. 17 in specimen) date, and signature.



Completed with the registered number of the slaughter-house (e.g. 17 in specimen).



" CANADA LABEL

" Label bearing particulars as follows :

" DOMINION OF CANADA

" *Department of Agriculture*

" Certified to be from carcasses free from disease, and prepared and packed under supervision.

" *Completed with name or registered number of establishment and signature.*" (See Coloured Plate.)

A fourth circular on the subject of Foreign Meat issued on April 29, 1909, contains the following provisions :

New "Official Certificate" in the case of Pork inspected in the Netherlands. " In their circular of 26th January, 1909 (Foreign Meat, No. 3), the Board stated that they had caused to be inserted in the *London Gazette* of the 22nd January, 1909, a notice containing a schedule of labels and marks declared to be admissible as Official Certificates in the case of pork, or other edible parts of the pig, which have been subjected to inspection in certain countries. In the case of the Netherlands the form of label scheduled was by the notice declared to be admissible as an Official Certificate only until 1st May, 1909.

" On consideration of communications received from the Netherlands Government in regard to the system of meat inspection in that country which has been established by the Netherlands Inspection of Meat for Export Law, 1907, and regulations thereunder contained in the Decree of 24th June, 1908, the Board have caused to be issued in the *London Gazette* of the 20th April, 1909, a notice containing in the schedule a description of a new form of label declared to be admissible after 1st May, 1909, in respect of pork and other edible portions of the pig subjected to inspection in the Netherlands. A copy of this notice is appended to this circular.

" The Board desire in this connection to draw attention to the paragraphs of their circular of 26th January under the heading 'Significance of Official Certificates in the administration of the Regulations.' "

Official Certification of "Mess Pork" and certain other Pork Products imported in Brine. " The Board have caused inquiries to be made regarding certain imported pork products described as mess pork, salted pigs' tongues in brine, pigs' spare ribs in brine, and pigs' feet in brine, with a view to determining whether these articles when not accompanied by an Official Certificate should be regarded as coming within the definition of 'Foreign Meat of Class I.' of the Foreign Meat Regulations, 1908. On the facts reported they have expressed the view that these products may at the present time be regarded as coming within the definition of 'Foreign Meat Unclassed.' The question of official certification in the case of salted pig products generally will be subject to further considera-

tion in connection with any regulations which may be made in future in respect of foreign meat."

Examination of Frozen Carcases of Pigs. "In the examination under the Regulations of carcases of pigs for the detection of disease conditions, it is important that inspection should be made of the lymphatic glands and other parts about the throat. Such inspection is, however, at present frequently impracticable in the case of carcases arriving in a frozen condition, without first thawing or splitting down the carcase or causing the head to be removed.

"The Board understand that with a view to obviating the inconvenience and loss of time which such measures entail, importers of frozen pig carcases are making arrangements for the parts about the throat to be well exposed by the use of skewers before and after freezing. It is desirable that the Medical Officer of Health should bring this arrangement to the notice of importers in cases where difficulty of examination is experienced. The Board would be glad in due course to be informed of the extent to which in practice it is adopted and is found to meet the difficulty referred to."

Packing of Frozen "Offal." "Large quantities of frozen livers, kidneys, hearts, tongues, ox-skirts, ox-cheeks, plucks, sweetbreads, &c., known in the trade as frozen 'offal,' are imported at certain ports. This 'offal' is usually packed in boxes or bags, and considerable difficulty has been experienced in its examination in consequence of the organs in question being frozen into a solid mass, moulded to the shape of the receptacle. In certain instances sample boxes or bags have been thawed out and the contents ascertained to be unsatisfactory either on account of evidence of disease or of decomposition in the centre of the mass.

"It is important that the Medical Officer of Health at the ports concerned should give attention to the condition of consignments of frozen 'offal,' and should examine them by thawing out specimen boxes or bags and deciding as to further examination of the consignment from the results so obtained. In this respect, however, consideration should be given to the manner in which the articles have been packed. Marked improvements in packing have taken place since the Regulations took effect. Ox kidneys, hearts, tongues, skirts, and other 'offal' are, in many cases, now being separately frozen in the country of origin before being packed, and arrive in such a way that on opening the package the organs retain their natural shape and permit of individual examination. In the case of such consignments, thawing for inspection need only be adopted in suspicious cases or resorted to as an occasional check."

Livers and Plucks. "In the case of packages containing frozen livers and plucks it is specially desirable, with a view to the detection of disease conditions, that the ordinary examination made of a consignment should comprise thawing out specimen boxes. Even in these cases, however, the extent to which this proceeding is necessary is diminished where the organs have been separately frozen and packed in the manner referred to."

Small Kidneys and Sweetbreads. "Small organs, particularly lambs' sweetbreads, pigs' kidneys, and sheep's kidneys, have frequently been imported in large boxes or bags in which they form a frozen mass which does not admit of inspection without previous thawing. It has been represented to the Board that separate freezing of each organ would in certain cases make it difficult to transport these articles in a marketable condition, and inquiries have been made as to alternative methods of packing which would ordinarily suffice to give the facilities necessary for inspection. The Board are advised that the case can to a large extent be met, in the case of kidneys, by packing so that the frozen contents of the box or bag consist of not more than two layers of kidneys which have not been tightly pressed together; and in the case of sweetbreads by the use of shallow boxes or other contrivances which secure that the frozen sweetbreads form a comparatively thin layer, *e.g.*, 2 to 2½ inches in depth. The Board understand that some packers, with a view to facilitating inspection under the Regulations, have already adopted this method of packing the small organs in question."

Intimation to Importers. "In order to obtain uniformity of practice in this matter at the ports concerned the Board will be glad if the Medical Officer of Health will bring the above considerations to the notice of importers of frozen offal which is not at present satisfactorily packed, in order that any necessary communications may be made to the packing-houses abroad at which the offal is prepared for export. It is desirable that special and detailed examination should be made of any imported frozen offal which after such communications is found to be packed in the unsatisfactory manner referred to.

" APPENDIX

" *Notice inserted in the 'London Gazette' of April 20, 1909*

" THE PUBLIC HEALTH (FOREIGN MEAT) REGULATIONS, 1908

"WE, THE LOCAL GOVERNMENT BOARD, in pursuance of the Public Health (Foreign Meat) Regulations, 1908, HEREBY GIVE NOTICE that, for the purposes of those Regulations, the Official Certificate of which the details are set forth in the representation or design or in the verbal description comprised in the schedule appended to and forming part of this Notice is, subject to such instructions as are comprised in the notes subjoined to the representation or design or verbal description, hereby declared to be admissible, in the case of the Netherlands, during the period beginning on the first day of May, One thousand nine hundred and nine, and ending on the thirtieth day of September in the same year, in the manner, to the extent, and subject to the rules and conditions prescribed in this Notice, as evidence that the pig from which any foreign meat is derived has been certified by a competent authority in the Netherlands, as the place of origin, to be free from disease at the time of slaughter, and that the meat has been certified by the like authority to have been dressed or prepared, and packed with the needful observance of all

requirements for the prevention of danger arising to public health from the meat as an article of food :

“ AND FURTHER, with respect to the manner, to the extent, and to the rules and conditions in, to, and subject to which every such Official Certificate is admissible as evidence for any such purpose as is hereinbefore described, We hereby prescribe as follows, that is to say :

- “ (i) The Official Certificate used in relation to foreign meat, or in relation to a box, case, receptacle, or package containing foreign meat shall be admissible as aforesaid only where the meat is derived from a pig.
- “ (ii) The Official Certificate in the form of a label shall be admissible as aforesaid only where the label is securely affixed or attached to any foreign meat, or to any box, case, receptacle, or package containing foreign meat ; and where the label so affixed or attached has not, in any other circumstances, or on any other occasion, been used as an Official Certificate.
- “ (iii) In this Notice, any word or expression to which a special meaning is assigned by the Public Health (Foreign Meat) Regulations, 1908, has the same meaning as in those Regulations.

“ SCHEDULE

“ NETHERLANDS

“ A label according to the subjoined representation or design and verbal description, that is to say : ”

(Copy of label here inserted. See below.)

“ NOTE. In the use of any label according to this representation or design, the spaces occupied by the figures and word ‘ Oss II.,’ and by the letters and figures ‘ a. No. 9217,’ will be filled in with substitutes, figures, words, and letters, denoting the slaughterhouse or other building or place at which the meat has been inspected, and other particulars required for administrative information.

“ Verbal Description

“ A slip of cardboard or of other suitable material containing the undermentioned particulars :

“ Obverse

“ The Royal Arms, the number or name of the slaughterhouse, or other building or place at which the meat has been inspected, a serial number, the signature of an authorised officer, and the words :

“ NEDERLAND

“ Vleesch voor uitvoer goedgekeurd overeenkomstig de Wet op de uitvoerkeuring van vleesch 1907 (Staatsblad no. 217) en het Koninklijk Besluit van 24 Juni 1908, no. 50.

“ Datum.....190 .

De Rijkskeurmeester.

“ Naam.....

NETHERLANDS LABELS.

FRONT OF LABEL



II. Oss.
a w. N° 2466

N E D E R L A N D.

Vleesch voor uitvoer goedgekeurd overeenkomstig het Koninklijk besluit van 21 November 1902 (Staatsblad n° 199).

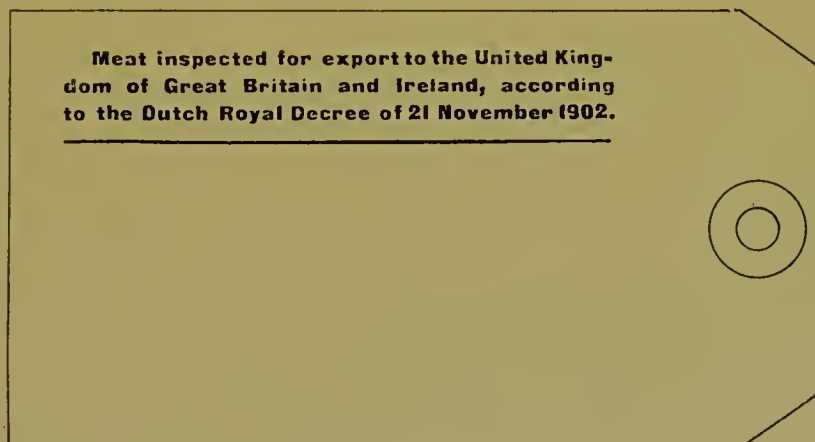
Datum 190

De Rijkskeurmeester

Naam

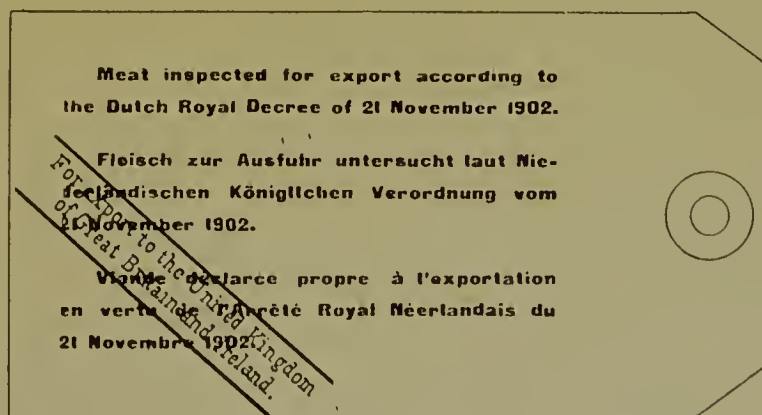
Completed with the registered number of establishment, name of district serial number, (e g II. Oss. a w N° 2466 in specimen) date, and signature.

BACK OF LABEL



Meat inspected for export to the United Kingdom of Great Britain and Ireland, according to the Dutch Royal Decree of 21 November 1902.

ALTERNATIVE BACK OF LABEL



Meat inspected for export according to the Dutch Royal Decree of 21 November 1902.

Fleisch zur Ausfuhr untersucht laut Niederländischen Königllichen Verordnung vom 21 November 1902.

V viande d'exportation propre à l'exportation en vertu de l'Arrêté Royal Néerlandais du 21 Novembre 1902.

For export to the United Kingdom of Great Britain and Ireland.

“ *Reverse.*

“The words: ‘Meat inspected for export according to the Dutch Law of 16 July, 1907, and the Royal Decree of 24 June, 1908, no. 50.’

“Also a crossing in the form of two parallel straight lines within which are the words:

“‘For export to the United Kingdom of Great Britain and Ireland.’”

Circular No. 5, issued on July 26, 1909, and addressed to “the Clerk to the Port Sanitary Authority, or the Town Clerk, or the Clerk to the District Council,” is in the following terms:

“SIR,—I am directed by the Local Government Board to advert to their circular of September 16, 1908, on the subject of the Regulations under the Public Health (Regulations as to Food) Act, 1907, and to draw your attention to the section of the circular which sets out the main considerations which should guide administrative action under the Public Health (First Series, Unsound Food) Regulations, 1908.

“In that section, attention has been drawn to the powers conferred upon Medical Officers of Health by Articles IV., V., VI., and VIII. of the Regulations to deal with foods which are diseased, unsound, or unfit for human consumption, and to the notices in writing which are necessary in connection with procedure under the above Articles.

“With the object of facilitating this procedure, and obtaining uniformity at the ports concerned, the Board have now prepared the specimen forms which are appended hereto.

“*Form A. Notice of detention of unsound food. Agreement made at the time of inspection for the surrender of the food for destruction, &c.*

“Form A is intended for use in cases where articles of food are recognised to be unsound at the time of inspection, and the importer or his authorised representative (*e.g.*, local agent, shipper, or wharfinger) agrees at that time to hand them over for destruction or other treatment approved by the Medical Officer of Health. Hitherto such cases have usually been dealt with by means of ‘surrender’ or ‘consent’ notes, and in some instances merely by verbal agreement. Such agreements, are, however, insufficient for the purpose. Considerable inconvenience and misunderstanding have been caused in some cases of this kind through the absence of written evidence of the arrangement made.

“By the use of Form A the voluntary ‘surrender’ of unsound food in these circumstances can be effected consistently with Article IV. (5) of the Regulations. The form provides for an interchange of the necessary documents between the inspecting officer and the importer or his authorised representative, and the Board consider it desirable that in future the procedure provided for by this form should be followed in the cases referred to.

“ Forms B and C. Notice of detention of unsound food. Communication with the Importer

“ Forms B and C are based on forms which have been found satisfactory in practice in the Port of London. They are together intended for use in cases where the unsound food is not surrendered to the Medical Officer of Health for destruction or approved treatment at the time of inspection.

“ Form B is the notice of detention to be given by the inspecting officer at the time of examination to the person in charge of the articles of food (*e.g.*, dock superintendent, wharfinger, warehouse-keeper, master of the ship, or agent of the importer), and specifies the place where they are to be detained.

“ The notice in Form C gives the importer the alternative of :

“ (1) Disposing of the articles of food in the manner approved by the Medical Officer of Health, and indicated by him on the reply sheet which is attached to Form C, or

“ (2) Leaving the matter to take its course before a Justice.

“ If the importer agrees to accept the arrangement indicated to him by the Medical Officer of Health, he will sign the undertaking set out in the reply sheet and return it forthwith.

“ If the signed reply sheet is not returned to the Medical Officer of Health, or an equivalent document received by him, within a reasonable time, it will be his duty to have the articles of food examined by a Justice, and to deal with them accordingly.

“ The reply sheet of Form C should in each instance be filled in by the Medical Officer of Health in such a way as clearly to indicate to the importer the manner of disposal which the Medical Officer of Health is prepared to approve. This may be done by appropriately filling the blank spaces and by striking out the printed words which do not apply. Examples are given in the note appended to the form.

“ Forms D, E, and F. Notices as to facilities for examination and detention pending examination of samples. Vouchers

“ Form D is intended for use in cases where necessity arises for making application in writing to obtain facilities for the examination of articles of food (Article IV., (1), (2), (3)).

“ Form E is the notice required by Article VIII. to be sent to the importer in those cases where the Medical Officer of Health desires to detain the consignment pending the result of special examination of samples.

“ Form F is a form of voucher to be supplied, when requested, in cases where samples have been taken from a consignment under Article VIII. of the Regulations.

“ I am, sir,

“ Your obedient servant,

“ S. B. PROVIS,

“ *Secretary.*”

Notice.**FORM A**

PUBLIC HEALTH (FIRST SERIES, UNSOUND FOOD) REGULATIONS, 1908

Article IV. (4) and (5)

NOTICE OF DETENTION OF UNSOUND FOOD

Port of *Sanitary Authority.*

Office .

Date

19 .

To*

THIS is to give notice that the undermentioned articles of food are unsound, unwholesome, or unfit for human consumption, and that the same may not be removed from until examined by a Justice, without my permission.

This permission will be given if you signify in writing on the counterfoil hereof that you consent to their being removed for immediate destruction under my supervision, or for such other treatment as I may approve.

.....*Medical Officer of Health.*

Details

Description and quantity

Where detained

Name of vessel

Where lying

.....*Inspector.*

FORM A

CONSENT TO REMOVAL OF UNSOUND FOOD

Date 19 .

*To the Medical Officer of Health,**Port of*

I, the undersigned, being the importer or the authorised representative of the importer of the following articles of food, viz. :

detained at

ex

lying at

hereby consent to their removal for immediate destruction under your supervision, or for such other treatment as you may approve.

Signature .

Address .

Representing .

* The importer, or his authorised representative (*e.g.*, local agent, shipper, or wharfinger).

Note on Form A.

It may be found convenient to have this form bound as a book for use at the dock side. The Notice filled up by the Inspector will supply sufficient evidence to the owner of the articles of food that they have been dealt with by the Sanitary Authority, and the counterfoil, signed by the importer, or his representative, will provide a record for the Sanitary Authority of the fact that the articles in question had been voluntarily surrendered for destruction.

FORM B

PUBLIC HEALTH (FIRST SERIES, UNSOUND FOOD) REGULATIONS, 1908
Article IV. (4)

NOTICE OF DETENTION

Port of _____ *Sanitary Authority.*
To the Medical Officer of Health.

Date 19 .

Notice of detention has been given in the following case :

Particulars

Description and quantity.

Where detained

If sorting required

Importer's name and address

Name of vessel

Port and Official No.

Where lying

From

Date of arrival

Where discharged and when

..... *Inspector.*

Notice.

FORM B

PUBLIC HEALTH (FIRST SERIES, UNSOUND FOOD) REGULATIONS, 1908
Article IV. (4)

NOTICE OF DETENTION

Port of _____ *Sanitary Authority.*

Office

Date 19 .

To*

This is to give notice that the undermentioned articles of food are unsound, unwholesome, or unfit for human consumption, and that the

* The Importer, Master of the Ship, or other person having charge of the articles of food.

Counterfoil; to be retained

1606 THE MEAT INDUSTRY AND MEAT INSPECTION

same are not to be removed from _____ without
my permission.

.....*Medical Officer of Health.*
Particulars

Description and quantity
Where detained

Name of vessel
Port and Official No.
Where lying
From
Date of arrival
Where discharged and when
.....*Inspector.*

Notice.

FORM C

PUBLIC HEALTH (FIRST SERIES, UNSOUND FOOD) REGULATIONS, 1908

Article IV. (4)

NOTICE OF DETENTION

Port of _____ *Sanitary Authority.*

Office

Date

19 .

To*

This is to give notice that the undermentioned articles of food are detained as unsound, unwholesome, or unfit for human consumption, and that the same may not be removed from until examined by a Justice, without my permission.

If you desire to have the articles dealt with otherwise than by a Justice, the annexed reply sheet should be signed and forwarded to me by return of post.

.....*Medical Officer of Health.*

FORM C. (REPLY SHEET)

(TO BE RETURNED TO THE MEDICAL OFFICER OF HEALTH AT THE OFFICE
OF THE PORT SANITARY AUTHORITY)

Date

19 .

To the †

and all others whom it may concern.

The undersigned, being importers of

* The importer of the articles of food.

† The person in charge of the articles of food.

Mark.	Articles of food.

lying at

ex

which have been declared by the Medical Officer of Health of the Port of
 Sanitary Authority to be unsound, unwholesome,
 or unfit for human consumption, do hereby authorise and instruct you
 to* the above articles of food under
 the supervision of the Medical Officer of Health of the said Sanitary
 Authority, and to destroy, or deliver to
 for destruction, any of the said articles declared by the said Medical
 Officer of Health to be unsound, unwholesome, or unfit for human
 consumption.

Signature

Address

NOTES ON FORM C

* EXAMPLES of the MANNER in which the WORDING of the REPLY
 SHEET may be ALTERED to meet PARTICULAR CASES

(Words in square brackets to be erased : words in italics should
 be manuscript additions.)

(a) [the above articles of food under the supervision of the Medical
 Officer of Health of the said Sanitary Authority, and to destroy, or]
 deliver to *the Port Sanitary Authority or their officer* for destruction
 [any of] the said articles . . . consumption.

The above would be used where the whole of the consignment
 referred to in the notice, *e.g.*, canned meats, was unfit for human
 consumption, and the Medical Officer of Health considered it necessary
 that it should be destroyed by the Port Sanitary Authority.

(b) *sort* the above articles of food under the supervision of the Medical
 Officer of Health of the said Sanitary Authority, and to destroy [or
 deliver to . . . for destruction] any of the said articles . . . consumption.

The above would be employed when a proportion of the articles,
e.g., bananas, are supposed to be unsound, and it is considered desirable
 to give the consignees the opportunity of sorting the sound from the
 unsound, and to allow them or their agents to dispose of the unsound
 articles under the supervision of the Medical Officer of Health.

(c) *sort* the above articles of food under the supervision of the Medical Officer of Health of the said Sanitary Authority, and to [destroy or] deliver to *the Port Sanitary Authority or their officer* for destruction any of the said articles . . . consumption.

The above provides for a similar case to (b), except that it is desirable that the articles of food found to be unsound, *e.g.*, canned meats, should be dealt with by the Port Sanitary Authority.

(d) *destroy* the above articles of food under the supervision of the Medical Officer of Health of the said Sanitary Authority [and . . . consumption].

The above is applicable where the whole of the articles, *e.g.*, fruit, are unfit for human consumption, and where there is no objection to the consignee, or his agent, himself destroying them under the supervision of the Medical Officer of Health.

Other variations in the wording can, of course, be employed to meet special cases.

Counterfoil.

FORM D

PUBLIC HEALTH (FIRST SERIES, UNSOUND FOOD) REGULATIONS, 1908

Article IV. (1), (2), (3).

EXAMINATION NOTICE

Port of

Sanitary Authority.

To the Medical Officer of Health.

An Examination Notice has been sent

To

Articles

Place of Deposit

Date

Time

..... *Inspector.*

Notice.

FORM D

PUBLIC HEALTH (FIRST SERIES, UNSOUND FOOD) REGULATIONS, 1908

Article IV. (1), (2), (3)

EXAMINATION NOTICE

Port of

Sanitary Authority

Office

Date

19 .

To*

and to all others whom it may concern.

I have to inform you that the examination of certain articles of food, viz. :

*The Importer, Master of the Ship, or other person having custody of lands or premises.

at present deposited in
is desirable. I have therefore to request that you will afford me, or
any person duly authorised on my behalf, proper access to the ship,
lands, or premises, and further, that you will arrange for such unpacking,
opening, or uncovering of cargo or goods as may be necessary for the
purpose of such examination.

.....*Medical Officer of Health.*

Counterfoil.

FORM E

PUBLIC HEALTH (FIRST SERIES, UNSOUND FOOD) REGULATIONS, 1908
Article VIII. (2)

NOTICE OF SPECIAL PROCEDURE

Port of *Sanitary Authority.*

To the Medical Officer of Health

Notice as to special procedure has been served on

Articles

Place of deposit

Date

Time

.....*Inspector.*

Notice.

FORM E

PUBLIC HEALTH (FIRST SERIES, UNSOUND FOOD) REGULATIONS, 1908
Article VIII. (2)

NOTICE AS TO SPECIAL PROCEDURE REQUIRED FOR EXAMINATION OF FOODS

Port of *Sanitary Authority.*

Office

Date 19 .

To*

This is to give notice that special procedure is necessary for the
examination of the following articles of food :

Mark.	Description.

and that the same are not to be removed from
for a period of hours without my consent ; and further,

* The Importer, or other person who has the custody or control of the articles of food.
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that you should afford such facilities for the completion of the said examination as I, or any person duly authorised on my behalf, shall direct.

.....*Medical Officer of Health.*

FORM F

PUBLIC HEALTH (FIRST SERIES, UNSOUND FOOD) REGULATIONS, 1908
Article VIII. (1).

Port of *Sanitary Authority.*

Voucher in respect of sample taken for purpose of examination.

Description of parcel.				Quantity taken as sample.
Mark.	Quantity.	Package.	ex Ship.	

.....*Inspector.*

Date.....

NOTE. This form should be bound in a book, with carbon duplicate.

A further circular (No. 6) dated September 30, 1909, contains the following instructions :

The experience which has been obtained of the working of the Regulations has shown the necessity for some addition to or amendment of their provisions in the directions indicated below, and the Board have accordingly issued further Regulations modifying in certain particulars the Regulations of 1908. Copies of the new Regulations are enclosed.

The amending Regulations are confined to substituting a new Article for Article I. (" Interpretation ") of the Order of 1908, and do not make any alteration in the provisions of Articles II. to XVII. of that Order which prescribe the procedure to be followed with respect to imported meat. The substituted Article follows, verbatim, the terms of Article I. of the Regulations of 1908, except in the cases of paragraphs (h), (i), (j) (k) and (o).

The definitions in Article I. of the new Regulations are to be read into the Regulations of 1908, and into any Order made under Article XVI. of those Regulations.

" Official Certificates." By notices published in the *London Gazette* certain Official Certificates have been declared admissible for the purposes referred to in paragraph (b) of Article I. of the Regulations of 1908 during the period ending on September 30, 1909.

Under the new Regulations further Official Certificates may be declared admissible for these purposes by a like notice. Moreover, any existing or future Official Certificate will continue to be admissible until

by a further notice published in the *London Gazette* it is declared to be so no longer.

“Official Certificates” now Recognised. *Canada, Denmark, Netherlands, New Zealand.* The labels and marks relating to pork which has been subjected to inspection in these countries have been described in the Board’s Circulars of January 26, 1909, and April 29, 1909.

Belgium. On consideration of communications received from the Belgian Government in regard to the system which has been organised in that country for the inspection of meat intended for export to the United Kingdom, the Board have caused to be published in the *London Gazette* of Friday, September 24, 1909, a notice containing in the schedule a description of a label which is declared to be admissible as an “Official Certificate,” in respect of pork and other edible portions of the pig subjected to inspection in Belgium.

Victoria and New South Wales. On consideration also of communications received from the Governments of the States of Victoria and New South Wales, labels or marks attesting inspection in those States have also been recognised as “Official Certificates” by publication in the notice referred to.

A copy of the notice in the *London Gazette*, including the schedule thereto in which the Belgian and Australian labels are described, is appended to this circular.

The Board may draw attention to the observations on this subject which were made in their circular of January 26 last.

Definitions of Foreign Meat for the Purpose of the Regulations. The amending Regulations make certain alterations in the description of the foreign meats which are comprised in the definitions of “Foreign Meat of Class I.” and “Foreign Meat of Class II.” in the Foreign Meat Regulations, 1908.

It will be remembered that the Regulations require that where as a result of a notice received from an officer of Customs or otherwise, the Medical Officer of Health has ascertained that any imported meat comes within the definition of “Foreign Meat of Class I.” or “Foreign Meat of Class II.,” he should give a notice forbidding the removal of the meat for any purpose other than exportation (*see* Article III. (5) and Article V.). If an importer to whom a notice of this kind has been given desires not to export the meat but to use it for some purpose other than sale for human consumption, the procedure to be adopted to enable him to do so is provided in those Regulations (Articles VI. and VIII.).

Scrap Meat. The Foreign Meat Regulations, 1908, includes boneless scrap meat in the definition of “Foreign Meat of Class I.” Scrap meat or trimmings of carcasses which contain bone are, however, occasionally imported. They are usually contained in barrels or bags and described as “neck meat,” “rib meat,” or by other names. Their importation must be considered open to objections similar to those which attach to the importation of boneless scrap meat.

The amending Regulations include meat which consists of scraps,

trimmings, or other pieces, of such shape or in such condition as to afford insufficient means of identification with definite parts of a carcass, in the definition of "Foreign Meat of Class I.," whether or not bone is present in such scraps or pieces. In any case where the Medical Officer of Health ascertains that meat of the kind referred to is being imported, the necessary notice applicable to "Foreign Meat of Class I." should be given.

Bacon, Ham, Salted Mess Pork, Salted Pigs' Tongues, Salted Pigs' Heads, &c. The Foreign Meat Regulations, 1908, do not require that bacon and ham, or certain salted parts of the carcass of the pig which are prepared in a manner comparable to that in which bacon and ham are prepared, should necessarily be attested by an "Official Certificate" in evidence of approved inspection in the country of origin as a condition of their importation for use for human food. In the case of uncertified packages containing pigs' heads and other salted products, however, the meat has on several occasions been found to show evidence of tuberculosis or other disease conditions. In other cases the lymphatic glands which would naturally be present in the portions of the salted carcass have been removed before importation in such a way as to suggest that the object of the removal of the glands has been to conceal the fact that they were affected by disease, or to prevent any attempt to discover the existence of disease on arrival in this country.

In regard to these salted articles, the amending Regulations include any severed part of the carcass of the pig which is not contained in a package bearing an "Official Certificate" in the definition of "Foreign Meat of Class I." if the lymphatic glands about such part are not present in their natural position.

The stomachs or "maws" of pigs are sometimes imported, in brine or packed in salt, for human consumption. The amending Regulations include any salted part of the pig which is not a severed part of the carcass in the definition of "Foreign Meat of Class I." if it is not imported in a package which bears an "Official Certificate."

Foreign bacon, ham, and salted pig products will be detained by Customs officers on receipt of an intimation from the Medical Officer of Health that he desires to examine salted pig products which arrive from some specified country or port of shipment, or particular consignments of such meat. Requests for detention should contain particulars sufficient for the identification of the meat in question by the Customs officers. It will usually be practicable for the Medical Officer of Health to examine salted pig products for the purpose of the Regulations without first requesting formal detention by Customs officers.

"Stripped" Meat. The Board's attention has been called to the fact that meat, particularly beef, is sometimes imported in the form of carcasses, or portions of carcasses, from which the pleura or lining membranes of the thorax have been stripped. Removal of the pleura is frequently practised in order to conceal evidence of disease conditions. The amending Regulations include any meat which comprises the ribs, but which on importation is ascertained to be without the pleura in the

category of "Foreign Meat of Class I." The addition thus made to the Regulations should receive special attention in connection with inspection made of imported beef.

APPENDIX

Notice published in the "London Gazette" of Friday, 24th September, 1909

THE PUBLIC HEALTH (FOREIGN MEAT) REGULATIONS, 1908

WE, THE LOCAL GOVERNMENT BOARD, in pursuance of the Public Health (Foreign Meat) Regulations, 1908, hereby give notice that, for the purposes of these Regulations, each Official Certificate of which the details are set forth in any representation or design or in any verbal description comprised in the schedule appended to and forming part of this Notice is, subject to such instructions as are comprised in the notes subjoined to the representation or design or verbal description, hereby declared, in relation to each country of which, as a place of origin, the name is prefixed as a heading to that representation, or design, or verbal description, to be admissible, during the period of twelve months beginning on the First day of October, One thousand nine hundred and eight, in the manner, to the extent, and subject to the rules and condition prescribed in this Notice, as evidence that the pig from which any foreign meat is derived has been certified by a competent authority in the place of origin to be free from disease at the time of slaughter, and that the meat has been certified by the like authority to have been dressed or prepared, and packed with the needful observance of all requirements for the prevention of danger arising to public health from the meat as an article of food :

AND FURTHER, with respect to the manner, to the extent, and to the rules and conditions in, to, and subject to which every Official Certificate is admissible, as evidence for any such purpose as is hereinbefore described, We hereby prescribe as follows, that is to say :

- (i) An Official Certificate used in relation to foreign meat or in relation to a box, case, receptacle, or package containing foreign meat shall be admissible as aforesaid only where the meat is derived from a pig.
- (ii) An Official Certificate in the form of a label shall be admissible as aforesaid only where the label is securely affixed or attached to any foreign meat, or to any box, case, receptacle, or package containing foreign meat; and where the label so affixed or attached has not, in any other circumstances, or on any other occasion, been used as an Official Certificate.
- (iii) In this Notice, any word or expression to which a special meaning is assigned by the Public Health (Foreign Meat) Regulations, 1908, has the same meaning as in those Regulations.

SCHEDULE

PLACES OF ORIGIN AND OFFICIAL CERTIFICATES

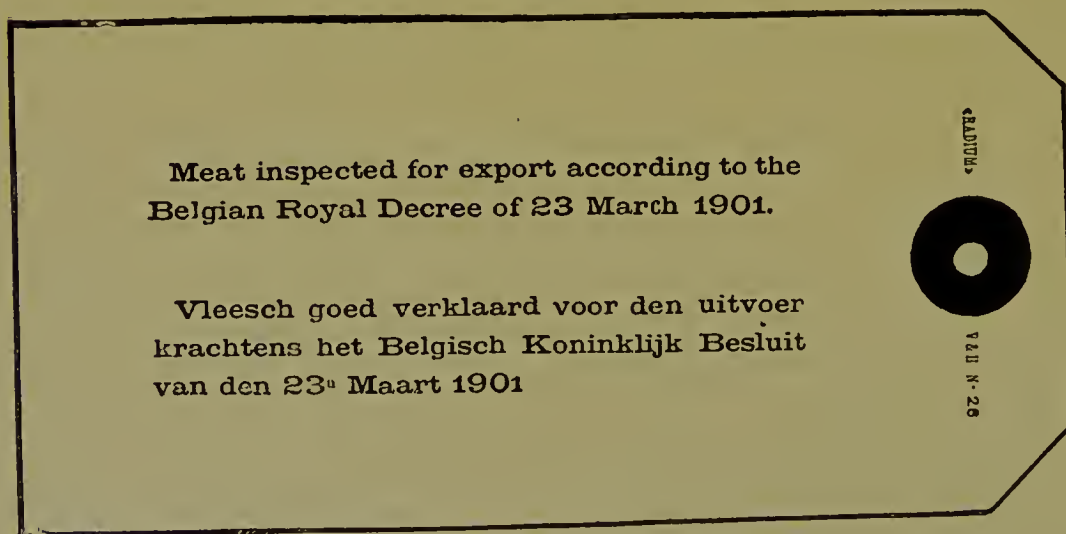
BELGIUM

1. A label according to the subjoined representation or design and verbal description, that is to say :

Obverse



Reverse



Verbal Description

A slip of cardboard or of other suitable material containing the dermentioned particulars :

Obverse

The Royal Arms, the name of the Commune, the number of the slaughterhouse, the signature of an authorised officer, and the words :

ROYAUME DE BELGIQUE

Viande pour l'exportation déclarée propre à la consommation conformément à l'Arrêté royal du 23 mars 1901 (1).

Date.....

L'Expert agréé par le Gouvernement :

Signature,

(1) Le porc n'est pas atteint de tuberculose. L'abatage, la préparation et l'emballage ont été effectués de manière à prévenir toute atteinte à la santé publique.

Reverse

The words : "Meat inspected for export according to the Belgian Royal Decree of 23 March 1901."

"Vleesch goed verklaard voor den uitvoer krachtens het Belgisch Koninklijk Besluit van den 23ⁿ Maart 1901."

STATE OF NEW SOUTH WALES

A mark branded on the meat together with a label :

(1) The mark to be according to the subjoined representation or design and verbal description, that is to say :



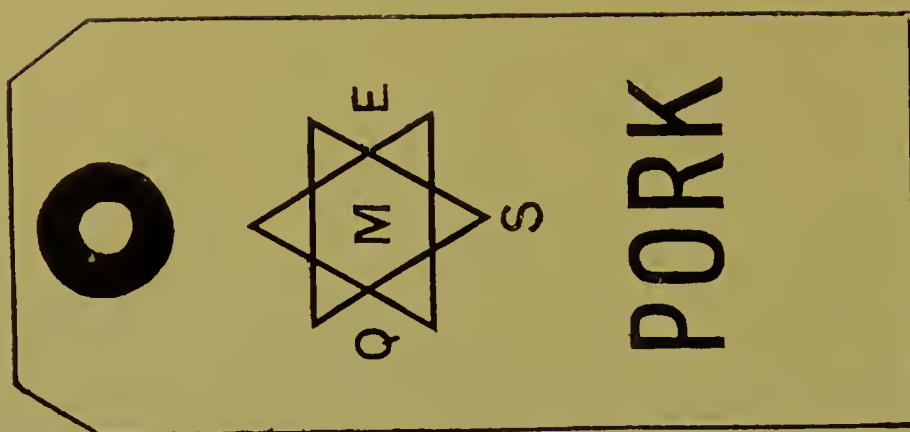
Verbal Description

A device branded on the meat, and comprising within a circle the letters N S W, separated from each other by radial lines.

(2) The label to be according to the subjoined representation or design and verbal description, that is to say :

Obverse.



Reverse

NOTE. In the label represented in the above design, the double triangle and letters Q M E S are the registered trade-mark of an exporting firm and indicate the place of slaughter. Other designs with a similar significance may be substituted.

Verbal Description

A slip of cardboard or of other suitable material containing the undermentioned particulars :

Obverse

On the right side of the label the words "Australia. State of New South Wales." Block signature of the Examining Officer under Commerce Act, 1905. On the left side of the label a star enclosing a circle containing the words "Commonwealth of Australia. Approved for Export."

Reverse

A registered trade-mark indicating the exporting company and the place of slaughter, and the word "Pork."

STATE OF VICTORIA

A label of suitable material and otherwise in accordance with the subjoined verbal description, that is to say :

A printed form containing the undermentioned particulars.

State of Victoria, abattoir of origin, name of the Inspecting Officer,

Representation or Design

and the words "Certified to be from animals free from disease and prepared and packed under Government supervision."

The label to bear a stamp according to the subjoined representation or design and verbal description, that is to say :

Verbal Description

Within an oval frame, a crown between the letters "D" and "A" together with the words "State of Victoria."

CHAPTER XI

DISEASES OF ANIMALS ACTS, 1894-1903

THE Board of Agriculture and Fisheries, in 1905, issued the following descriptions of the symptoms of cattle plague, pleuro-pneumonia, foot-and-mouth disease, sheep-pox, sheep scab, swine fever, glanders (including farcy), rabies, anthrax, epizootic lymphangitis, and mange, with the view of assisting inspectors, as well as stock owners, in Great Britain, to detect those diseases :

Cattle Plague. A contagious and eruptive fever due to an undiscovered infective agent. The animals affected are bovines, rarely sheep, camel, and certain wild ruminants.

The temperature rises in the early stages. The animal is off its feed, dull, and the coat is staring. Sometimes shivering is noticed. The breathing is quick, a watery or mucous discharge flows from the eyes and nostrils ; in the latter case there may be a slight amount of blood in the discharge. In milch cows the secretion of milk is diminished or arrested. The membrane of the nostrils is reddened, and an eruption, like grains of bran, appears at the lower parts. This eruption is often followed by distinct ulceration, which may appear in the nostrils, inside the lower lip, and on the tongue. The bowels are at first constipated but in the later stages diarrhœa often sets in. In this case the dung has a foul smell, and is often tinged with blood. The animal falls away rapidly and the disease usually has a fatal termination in from six to ten days.

It does not attack single animals in a herd, but spreads rapidly from one to another.

The lungs are congested and often contain fluid. Congestion and ulceration of the fourth stomach are present. Congestion of the bowels, often followed by a greyish deposit on the mucous membrane, and by ulceration, is also seen. The lymph glands are dark red in colour. The flesh is of a dark mahogany colour ; it putrefies rapidly, and should not be used for food. The carrying about of the flesh by dogs and birds helps to spread the disease.

Pleuro-pneumonia. A contagious disease affecting the lungs and pleura, and due to an infective agent.

The first signs of disease often escape notice. The temperature rises. A dry, husky cough is present, especially when the animal first gets on its feet or when made to run. In marked cases the breathing is rapid, and the movement of the flanks is increased. If punched in the ribs, the animal may grunt or show signs of pain. Some of the affected animals may become greatly emaciated, but others, especially those which have

passed the acute stages, may appear to be in excellent condition. It does not follow, however, that the latter are cured; they continue to infect others for a very long time.

The chest cavity often contains a yellow fluid. The lungs may be fixed to the ribs by a thick yellowish membrane.

The lungs are very solid in parts, and the surface is often yellow. The cut section is marbled in red and yellow. The septa (or fibrous tissue lines) are very broad, and a yellow fluid exudes from the cut surface. In old cases a grey area of soft dead tissue is often present in the lung, and this may be surrounded by new fibrous tissue. Sometimes abscesses are found. The flesh may be quite good and fit for food if the animal has been slaughtered. In the acute stages, however, and in emaciated animals, it is watery, of poor quality, and should not be eaten.

Foot-and-mouth Disease. A contagious and eruptive fever, due to an undiscovered infective agent.

All animals and human beings may suffer from this disease. Cattle, sheep, and pigs are especially liable. In cattle, sheep, and pigs the disease begins suddenly and spreads with alarming rapidity. It is not a very fatal disease, but stock lose condition when attacked. The temperature rises. The animal smacks his lips, and saliva drips from the mouth. Sometimes lameness is the first symptom noticed. In cattle, vesicles (blebs) are found inside the upper lip and on the tongue. The surface under the vesicle is red. The vesicles also appear between the toes and on the teats of the cow. They seldom appear on the body except in the pig. The milk from affected cows conveys the disease to other animals and to human beings. It should be destroyed or be thoroughly boiled before being used. The flesh of slaughtered animals is harmless and usually fit for food.

Sheep-pox. Sheep-pox is a contagious eruptive fever caused by an agent which is as yet undiscovered.

Only sheep are liable to contract this disease. The possibility of its being reintroduced is remote, because—although an inoculable disease—it has never appeared in this country otherwise than by the importation of diseased living animals, and the Orders of the Board prohibit the landing in Great Britain of sheep from those countries in which the sheep-pox exists. It might, however, arise from the importation of virus.

Sometimes the disease runs a very rapid course, which ends fatally in a few days. This form of disease is seen mostly in lambs. The chief symptoms are those of fever, intoxication, and paralysis. An eruption in the form of red spots appear on the membranes of the eyes and nose and on the hairless parts of the skin.

In older sheep the disease begins by signs of serious ill-health. The temperature is high, and the appetite is suppressed. An eruption appears on the mucous membranes of the nose, eyes, and mouth, and on the hairless parts of the skin—inside the thighs and elbows, under the belly, on the scrotum and udder. The eruption may, however, appear also on the parts of the body covered by wool. On the hairless regions it shows

itself first in the form of small pimples, which may grow to the size of a sixpenny piece, or even larger. The larger pimples are flattened on the surface, and the skin around the base is reddened. A thick reddish yellow discharge oozes from the pimples, and forms a yellow crust on the surface. Pregnant ewes often abort.

A post-mortem examination shows the above-described eruption on the skin. The membrane on the throat is inflamed, and sometimes ulcerated. The covering membrane of the lungs shows red spots on its surface.

Solid grey patches are often found in the lung substance. The cavities of the chest, heart sac, and abdomen contain a reddish-coloured fluid. The intestinal membrane is sometimes inflamed in patches.

The kidneys often show grey patches under the capsule.

Scab in Sheep. A disease of the skin caused by certain members of a class of small insects known as acari.

Scab is popularly known in animals other than sheep as mange. The parasites which cause mange belong to the same family as those which cause scab, but they are a different variety. In sheep three forms of scab are met with. Psoroptic scab, due to the *Psoroptis communis*, is the most common form found in sheep. Sarcoptic scab, or mange, due to the *Sarcoptes scabiei* var. *ovis*, occurs in sheep, but it is rare.

Symbiotic (scab) mange is also known.

The sarcoptic parasites will live on other animals and on human beings. They cause severe symptoms; the other parasites only live on man for a few days, causing temporary irritation.

Psoroptic scab begins on the less woolly or hairy parts, but it soon spreads to other parts of the body. The first symptoms appear in about three weeks after infection. During the cold weather, however, the incubation period may be longer, as the eggs hatch out more slowly, and the symptoms in the latter case are not so marked. Still, it is a fact that in this country a greater number of scab cases occur in the cold season, possibly because less dipping takes place and the sheep are more crowded together for warmth. The animals rub themselves against fixed objects and show signs of satisfaction when scratched with the hand. If the wool be parted, the skin underneath is seen to be red in patches. Small pimples, from which a thick fluid exudes, are found on the skin. This fluid coagulates and forms scabs which agglutinate the wool. The constant biting at the skin and rubbing against fixed objects cause the wool to drop off, and give rise to extensive sores. If the animals are not treated, they become emaciated, and many of them die of exhaustion.

Sarcoptic mange in sheep appears on the head and ears. Sometimes it is seen on the tails of large-tailed sheep. It gives rise to a formation of thick yellow crusts. Symbiotic mange appears usually at the lower parts of the limbs about the pasterns and coronets—and at the base of the tail. The symptoms are not severe, but the animals rub their legs and tails, and the wool becomes broken.

If a scraping be taken from the diseased patches and placed in

the sun the moving parasites can often be seen with a magnifying-glass.

Swine Fever. A contagious eruptive disease caused by a microbe.

The disease may come on rapidly, especially in young pigs. This is the acute form, which generally ends fatally in about three days. The symptoms are less definite than in chronic cases. The temperature is high— 105° F. or even higher. The breathing is quick; the pigs seem to have lost control over their hind-quarters, and stagger if made to walk. A red rash appears on the skin at the base of the tail, under the belly, inside the thighs, and on the ears.

Usually the symptoms come on more slowly. The pigs appear to be dull; they lie under cover and are disinclined to move. The appetite is lost; frequently the animals vomit. Constipation, followed by diarrhoea with bloodstained fæces, is often observed. A mucous discharge may be present around the eyes. Red patches, which later on assume a violet tinge, are observed at the base of the tail, inside the thighs and hocks, under the belly, and on the ears. The temperature is high— 104 to 106° F.

The pigs can be roused only with difficulty, and when made to move stagger about as if inebriated. Very frequently lung symptoms are present. In this case the sick animals suffer from a short cough, and the breathing is very laboured. The lung symptoms are not necessarily due directly to swine fever, but they frequently accompany it and one must always be suspicious if a number of pigs show signs of lung trouble. The animals die in from one week to three. They may, however, recover, or drag on for two months or more in an emaciated condition. In countries where the disease has been long established an infected animal sometimes appears to be in normal health.

The carcase is generally emaciated. The discoloured patches on the skin have a livid hue, but this is also seen in other diseases of swine.

In acute cases followed by rapid death, the changes are not characteristic, but one's suspicions should be aroused if a number of swine become sick about the same time. In the more chronic cases the most characteristic change—ulceration—is found in the alimentary tract. The ulcers may be present on the tongue, the stomach, or any part of the bowel, but in most cases they are confined to the more posterior portions of the latter, particularly around the junction of the ilium with the cæcum.

The most typical ulcer is about the size of a threepenny piece. Its edges are circular, and raised above the membrane. The centre of the ulcer is soft, and often yellow or black in colour. The other parts of the bowel may be inflamed, and often the inner surface is covered by a yellowish deposit. Two loops of bowels may have grown together.

The lungs are very often, though not always, solid in patches, and fluid may be present in the chest. The glands are very red in colour in the more acute cases.

Glanders and Farcy. These two names are applied to one and the same disease, which is due to a microbe—*Bacillus malleus*. The disease

is called "farcy" when located on the surface of limbs or body; "glanders" when the principal symptoms are seen in the nostrils, submaxillary glands, and lungs.

The horse tribe is most commonly affected with glanders. Man not infrequently gets the disease from the horse by inoculation through a wound. The dog, the cat, and the wild carnivora may be infected. The ox is absolutely immune. Sheep, goats, and pigs are immune for all practical purposes.

A horse may be affected with glanders and show no symptoms except slight unthriftiness. This is called occult glanders, and can only be diagnosed by the mallein test.

In typical clinical cases there is a thick grey-coloured discharge from one or both nostrils. Ulcers and ulcerous patches are seen inside the nasal cavities, and the glands under the jaw are enlarged and hard. The temperature may be raised, but in chronic cases it may be no higher than the normal. In severe and acute cases the temperature is several degrees above normal, and the animal shows distinct symptoms of respiratory disease. In farcy one or more limbs become swollen. The lymph vessels stand out prominently on the inside of the limbs. The vessels give a cord-like feel to the hand, and small nodules appear along the course of the vessels. These nodules become ulcers, which discharge a thick, yellow fluid of oily appearance. The ulcers may heal and leave a scar, but they usually break out again. Farcy may also appear on the skin of the neck and body.

One sees ulcers on the skin if farcy has been present. Besides what one sees in the live animal, one may also find ulceration of the throat and air passages. The most constant changes are found in the lungs. In acute glanders, small grey nodules about the size of a pin-head are seen all through the lung substance. In the chronic form the nodules in the earlier stages appear as small, grey patches with a red margin. Others are of pus-like consistence. The older nodules are hard and shot-like to the touch; some of them are gritty—calcification. The number of nodules in a lung varies from one or two to hundreds. The donkey suffers from an acute form of glanders, in which the lungs are inflamed over a large surface. The tissue is solid, and on section the surface of the lung has a greyish red colour.

Rabies. An inoculable disease caused by a still undiscovered agent.

All animals, including human beings, may suffer from rabies if the virulent material be inoculated, but it is chiefly by the dog that the disease is spread. In human beings the disease is called hydrophobia.

The disease is characterised in the earlier stages by maniacal symptoms and later by paralysis.

A dog is observed to change his former habits. He is restless, and often seeks dark corners, or wanders away from his home in an aimless way. He will sometimes snap at persons, other animals, and inanimate objects (furious rabies). He also foams at the mouth. He will tear up and swallow such articles as wood and cloth; in fact, it sometimes happens

that attention is drawn to his condition by the lodgment of a sharp object in his throat.

The voice becomes altered to what might be described as a weird howl.

In the later stages paralysis sets in (dumb rabies) which first affects the lower jaw, but may ultimately show itself in the limbs. The jaw drops, and saliva, which the dog is unable to swallow, trickles from the mouth.

Persons are sometimes inoculated by getting the saliva on the fingers and unwittingly rubbing it into the eyes or scratches.

It should be noted that the saliva has been found virulent in experimentally inoculating animals three days before the appearance of even the premonitory symptoms.

The post-mortem appearances are not constant. For this reason the head of a suspected dog should be immediately sent to a pathologist or to the Board's laboratory, so that inoculations may be made with the brain substance.

The principal changes observed are congestion of the membrane of the throat, and a similar condition in various parts of the stomach and bowel. The stomach may be quite empty except for a variable quantity of blood-stained mucus. If, however, the dog has been killed in the earlier stages the stomach may contain a mass of foreign material such as wool, hair, wood, coal, &c.

Anthrax. A contagious disease caused by a microbe, *Bacillus anthracis*.

Human beings and all animals are liable to anthrax. The disease is seen chiefly in cattle, pigs, and sheep, but not uncommonly in horses.

The disease shows itself suddenly. It is very fatal, usually within forty-eight hours. It does not often, in the United Kingdom, spread with rapidity from animal to animal, but it may affect a number of swine at the same time if they have been fed on anthrax flesh or organs.

A beast which a short time before appeared to be well is found dead or in a dying condition. Frequently blood oozes from the nostrils and the anus. In cattle there are no typical symptoms, but in horses and pigs the regions of the throat is often found to be swollen.

The carcase is swollen. Blood is found around the nostrils and anus. The muscles are often infiltrated with blood at certain points. The lungs and glands are congested. The spleen is very much enlarged; it is softer and darker than normal, and its substance usually resembles tar.

In most parts of this country the enlargement of the spleen is of great diagnostic importance, but in those districts where Redwater exists, enlargement of the spleen may also be expected. In this case, however, the spleen substance has not the same fluid tarry appearance. The flesh is dangerous to animals and human beings. It is the height of folly on the part of a farmer to open an animal suspected to have died of anthrax, as he may thereby cause further infection of his premises. In cases of sudden death he should await a skilled opinion before disposing of the carcase.

Epizootic Lymphangitis. A contagious and eruptive disease caused by the *Cryptococcus farciminosus*.

Animals affected are horses and mules. The ox is susceptible, but seldom takes the disease under natural conditions.

The eruption appears on the legs, the neck, the head, or any part of the body. Usually it starts near a wound through which the microbe has entered the tissues, but the ulcers often do not appear for months after the wound has healed. The lymph vessels in the skin stand out prominently, and small hard nodules about the size of a hazel-nut appear on their course. These nodules suppurate and discharge a thick yellowish pus. Proud flesh grows from the wounds, the lymph vessels around become inflamed, and eruption gradually extends. A thick yellow scab may form over a patch of ulcers. The neighbouring glands are swollen and hard. The ulcers heal with difficulty, even under treatment, and they may break out again after an apparent cure has been effected.

The ulcers may appear inside the nostrils, but this is not so common as in the case of glanders. In epizootic lymphangitis the glands under the jaw may also be enlarged, as in the former disease, and a discharge may appear at one or both nostrils. If taken in the early stages this disease is curable, but after an advanced stage is reached treatment is hopeless. In the latter case the animals emaciate, and may die of exhaustion.

This disease is distinguished from farcy (glanders) by the presence of the cryptococcus in the pus, and failure of the mallein test to produce a reaction. Both glanders and epizootic lymphangitis may be present in the same animal.

On post-mortem examination one usually sees little beyond what is seen during life, but occasionally abscesses are found in the internal organs.

CHAPTER XII
STATUTORY RULES AND ORDERS, ETC.

STATUTORY RULES AND ORDERS, 1909

No. 1064

PUBLIC HEALTH, ENGLAND

Unsound Food

THE PUBLIC HEALTH (FOREIGN MEAT) AMENDING REGULATIONS, 1909
DATED SEPTEMBER 27, 1909

(54,199)

To all Port Sanitary Authorities ;—

To all other Sanitary Authorities and Local Authorities as herein defined ;—

To all Officers of Customs and Excise ;—

To all Medical Officers of Health of the Sanitary Authorities and Local Authorities aforesaid ;—

To all Masters of Ships ;—

And to all others whom it may concern.

Whereas, in relation to articles of food, the Public Health (Foreign Meat) Regulations, 1908, provide for the use of an Official Certificate, for the Classification of Foreign Meat, and for the combined action of Authorities for the purposes of those Regulations ;

And whereas it is expedient that, with respect to the aforesaid matters and to other purposes, the Public Health (Foreign Meat) Regulations, 1908, be altered, and that, accordingly, such Regulations as are hereinafter set forth be made ;

And whereas the Commissioners of Customs and Excise have signified their consent to the said Regulations, so far as they apply to the Officers of Customs and Excise :

Now, therefore, We, the Local Government Board, by this Our Order, and in the exercise of the powers conferred upon Us by the Public Health Act, 1875, the Public Health (London) Act, 1891, the Public Health Act, 1896, and the Public Health (Regulations as to Food) Act, 1907, and of every other power enabling Us in that behalf, do make the following Regulations, that is to say :

Article I.—Article I. of the Public Health (Foreign Meat) Regulations, 1908, shall be revoked : and those Regulations shall be altered so that they shall have effect, with the substitution for the Article so revoked of the following Article, namely :—

“ Article I.—In these Regulations, unless the contrary intention
 “ appears—

- “ (a) Words importing the masculine gender include females ;
- “ (b) Words in the singular include the plural, and words in the
 “ plural include the singular ;
- “ (c) Expressions referring to writing include references to
 “ printing and other modes of representing or reproducing
 “ words in a visible form ;
- “ (d) The expression ‘ cattle ’ includes a bull, cow, ox, heifer,
 “ calf, ram, ewe, wether, goat, and kid ;
- “ (e) The expression ‘ pig ’ includes a boar, cow, and hog ;
- “ (f) The expression ‘ meat ’ means pork, the flesh of cattle, any
 “ other edible part of a pig or of cattle, or a substance,
 “ compound, material, or article of which pork, or the flesh
 “ of cattle, or any other edible part of a pig or of cattle
 “ is an ingredient ;
- “ (g) The expression ‘ foreign ’ used in relation to meat means
 “ brought from a place situate elsewhere than in the United
 “ Kingdom, the Channel Islands, or the Isle of Man ;
- “ (h) The expression ‘ Official Certificate ’ used in relation to
 “ foreign meat or in relation to a box, case, receptacle, or
 “ package containing foreign meat, means a certificate,
 “ label, mark, stamp, or other voucher which, by a notice
 “ published in the London Gazette at any time during the
 “ period of twelve months beginning on the First day of
 “ October, One thousand nine hundred and eight, or which,
 “ by a notice published in the London Gazette after the
 “ expiration of that period, is declared to be admissible in
 “ the manner, to the extent, and subject to the rules and
 “ conditions prescribed in that notice, as evidence that the
 “ cattle or pig from which the meat is derived has been
 “ certified by a competent authority in the place of origin
 “ to be free from disease at the time of slaughter, and that
 “ the meat has been certified by the like authority to have
 “ been dressed or prepared, and packed with the needful
 “ observance of all requirements for the prevention of
 “ danger arising to public health from the meat as an article
 “ of food ; and, for the purposes of this definition and of
 “ any Regulations under the Public Health (Regulations as
 “ to Food) Act, 1907, every Official Certificate which, by a
 “ notice published in the London Gazette at any time
 “ during the period of twelve months beginning on the
 “ First day of October, One thousand nine hundred and
 “ eight, is declared to be admissible as aforesaid, shall,
 “ notwithstanding anything prescribed in the notice, con-
 “ tinue to be so admissible until, by a further notice to

- “ be published in the London Gazette, the said Official Certificate is declared to be no longer so admissible ;
- “(i) The expression ‘ Foreign Meat of Class I.’ means foreign meat in the form
- “(A) Of scrap meat, namely, meat which, whether it is fresh, or has, before importation, been subjected to a process of freezing or other refrigeration, or to chemical or other treatment, with or without the addition of any preservative or colouring substance—
- “ (i) consists of scraps, trimmings, or other pieces (whether with or without bone in its natural state of attachment) of such shape or in such condition as to afford insufficient means of identification with definite parts of a carcass ; and
- “ (ii.) has not, before importation, been made ready for human consumption in the form of a sausage, or of another prepared or manufactured article of food ;
- “ or
- “(B) Of tripe, namely, any edible part of the stomach, or Of a tongue or kidney,
- “ to which formalin, or a solution, or other preparation of, or comprising formic aldehyde ; or a compound containing fluorine or boron ; or salicylic acid, formic acid, sulphurous acid, benzoic acid, or any compound of any such acid has been applied ;
- “ or
- “(C) Of severed parts of the carcass of a pig, or of other edible parts of a pig, which have not, before importation, been salted, cured, pickled, dried, or smoked, or otherwise prepared in the manner in which bacon or ham is ordinarily prepared, and which are not contained in a box, case, receptacle, or package with an Official Certificate impressed thereon, or affixed or attached thereto ;
- “ or
- “(D) Of severed parts of the carcass of a pig, or of other edible parts of a pig, which have, before importation, been salted, cured, pickled, dried, or smoked, or otherwise prepared in the manner in which bacon or ham is ordinarily prepared, and which are not contained in a box, case, receptacle, or package with an Official Certificate impressed thereon, or affixed or attached thereto, and which, in the case of the severed parts of the carcass, are without the lymphatic glands about those parts in their natural position ;
- “ or
- “(E) Of meat which, whether derived from cattle or a pig, is in the form of a carcass, or of a part of a carcass, and, in

- “either case, comprises the ribs, and is without any such
 “membrane as, in its natural position, forms the lining of
 “the cavity enclosed by the ribs ;
- “(j) The expression ‘Foreign Meat of Class II.’ means foreign
 “meat which, being in the form of the entire carcase of a
 “pig, is without the head in its natural state of attachment
 “to the carcase, or is without the lymphatic glands about
 “the throat, or about any other part of the carcase, in their
 “natural position ;
- “(k) The expression ‘Foreign Meat of Class III.’ means foreign
 “meat which is in the form of severed parts of the carcase of
 “a pig, or of other edible parts of a pig, which is not and
 “does not comprise any foreign meat of Class I., or any
 “foreign meat of Class II., and which is contained in a box,
 “case, receptacle, or package with an Official Certificate
 “impressed thereon, or affixed or attached thereto ;
- “(l) The expression ‘Foreign Meat Unclassed’ means foreign
 “meat other than foreign meat of Class I., foreign meat of
 “Class II., or foreign meat of Class III. ;
- “(m) The expression ‘importer’ means any person in the United
 “Kingdom who, either as owner or consignee, agent or
 “broker, is entitled to the possession, custody, or control
 “of any foreign meat ;
- “(n) The expression ‘ship’ includes a vessel or boat ;
- “(o) The expression ‘Officer of Customs and Excise’ includes
 “any person acting under the authority of the Commissioners
 “of Customs and Excise ;
- “(p) The expression ‘Master’ used in relation to a ship includes
 “the officer or other person for the time being in charge or
 “command of the ship ;
- “(q) The expression ‘Sanitary Authority’ means every Port
 “Sanitary Authority, and every Council of a Municipal
 “Borough or other Urban District, and every Rural District
 “Council whose borough or district includes or abuts on
 “any part of a Customs port which part is not within the
 “jurisdiction of a Port Sanitary Authority ;
- “(r) The expression ‘the District’ means the District of a Sani-
 “tary Authority ;
- “(s) The expression ‘Medical Officer of Health’ includes any
 “duly qualified Medical Practitioner appointed or employed
 “by a Sanitary Authority to act in the execution of these
 “Regulations ; and any other person appointed or employed
 “by the Sanitary Authority under these Regulations to
 “exercise any powers, or to discharge any duties assigned
 “to the Medical Officer of Health ;
- “(t) The expression ‘Local Authority’ means every Council of

“ a Municipal Borough or other Urban District and every
 “ Rural District Council, not being a Sanitary Authority
 “ within the meaning of these Regulations, and includes
 “ the Common Council of the City of London and every
 “ Council of a Metropolitan Borough ;

“(u) The expression ‘ area ’ used in relation to a Local Authority
 “ means the area subject to the jurisdiction of the Local
 “ Authority for the purposes of the Public Health Act, 1875,
 “ or of the Public Health (London) Act, 1891, as the case
 “ may be.”

Article II.—These Regulations shall come into operation on the Thirtieth day of September, One thousand nine hundred and nine, and then and thereafter the Public Health (Foreign Meat) Regulations, 1908, and any Order theretofore made in pursuance of Article XVI. of those Regulations shall apply and have effect and shall be enforced and executed in such form and in such manner as will give full effect to the alterations made by these Regulations, and as if, throughout the Public Health (Foreign Meat) Regulations, 1908, references to an Officer of Customs and Excise were substituted for references to an Officer of Customs, and as if, throughout any such Order, references to the Public Health (Foreign Meat) Regulations, 1908, as altered by these Regulations, were substituted for references to the Public Health (Foreign Meat) Regulations, 1908, and references to an Officer of Customs and Excise were substituted for references to an Officer of Customs.

Article III.—These regulations may be cited as “ The Public Health (Foreign Meat) Amending Regulations, 1909.”

Given under the Seal of Office to the Local Government Board,
 this Twenty-seventh day of September, in the year One thousand
 nine hundred and nine.

(L.S.)

John Burns,
 President.

S. B. Provis,
 Secretary.

Notice. The Public Health Act, 1896, provides by Sub-section 3 of Section 1 that if any person wilfully neglects or refuses to obey or carry out, or obstructs the execution of any regulation made under any of the enactments mentioned in that Act he shall be liable to a penalty not exceeding One Hundred Pounds, and in the case of a continuing offence to a further penalty not exceeding Fifty Pounds for every day during which the offence continues.

The power of making regulations under the Public Health Act, 1896, and the enactments mentioned in that Act is enlarged by the Public Health (Regulations as to Food) Act, 1907.

STATUTORY RULES AND ORDERS, 1908

No. $\frac{1179}{S. 84}$

PUBLIC HEALTH, SCOTLAND

Unsound Food

THE PUBLIC HEALTH (FIRST SERIES: UNSOUND FOOD) REGULATIONS
(SCOTLAND), 1908. DATED NOVEMBER 25, 1908

To all Local Authorities in Scotland ;—

To all Officers of Customs ;—

To all Medical Officers of Health ;—

To all Masters of Ships ;—

And to all others whom it may concern.

Whereas by Section 1 of the Public Health (Regulations as to Food) Act, 1907, it is enacted as follows :—

- “(1) The power of making regulations under the Public Health Act, 1896, and the enactments mentioned in that Act, shall include the power of making regulations authorising measures to be taken for the prevention of danger arising to public health from the importation, preparation, storage, and distribution of articles of food or drink (other than drugs or water) intended for sale for human consumption, and, without prejudice to the generality of the powers so conferred, the regulations may—
- “(a) provide for the examination and taking of samples of any such articles ;
 - “(b) apply, as respects any matters to be dealt with by the regulations, any provision in any Act of Parliament dealing with the like matters, with the necessary modifications and adaptations ;
 - “(c) provide for the recovery of any charges authorised to be made by the regulations for the purposes of the regulations or any services performed thereunder ;
- “(2) For the purposes of regulations made under this Act, articles commonly used for the food or drink of man shall be deemed to be intended for sale for human consumption unless the contrary is proved.
- “(3) In the application of this Act to Scotland, Part IV. of the Public Health (Scotland) Act, 1897, shall be substituted for the public Health Act, 1896.”

And whereas by Section 85 of the Public Health (Scotland) Act, 1897, it is enacted that Regulations of the Local Government Board for Scotland made in pursuance of Part IV. of the said Act may provide for

such Regulations being enforced and executed by the Officers of Customs, as well as by other Authorities and Officers, and by subsection (2) of the aforesaid section it is provided that the Regulations shall be subject to the consent, so far as they apply to the Officers of Customs, of the Commissioners of His Majesty's Customs ;

And whereas, for the prevention of danger arising to public health, it is expedient that such regulations as are hereinafter set forth be made in relation to articles of food ;

And whereas the Commissioners of His Majesty's Customs have signified their consent to the said Regulations, so far as they apply to the Officers of Customs ;

Now therefore, We, the Local Government Board for Scotland, by this Our Order, and in exercise of the powers conferred upon Us by the Public Health (Scotland) Act, 1897, and the Public Health (Regulations as to Food) Act, 1907, and of every other power enabling Us in that behalf, do make the following Regulations, that is to say :—

PART I

Article I.—In these Regulations, unless the contrary intention appears—

- (a) The expression “ship” includes any sailing or steamship, vessel, or boat not belonging to His Majesty or any Foreign Government ;
- (b) The expression “Master” used in relation to a ship includes the officer or other person for the time being in charge or command of the ship ;
- (c) The expression “Officer of Customs” includes any person acting under the authority of the Commissioners of His Majesty's Customs ;
- (d) The expression “article of food” means an article of food which, as part of the cargo of a ship, is brought to, or delivered or landed at a place within Scotland either as a place of actual or appointed destination, or as a place of deposit for the purpose of transmission to a place of actual or appointed destination elsewhere in the United Kingdom ;
- (e) The expression “importer” means any person in the United Kingdom who, either as owner or consignee, agent or broker, is entitled to the possession, custody, or control of any article of food ;
- (f) The expression “Local Authority” has the same meaning as in the Public Health (Scotland) Act, 1897, and includes any Port Local Authority or Joint Port Local Authority constituted in terms of that Act ;
- (g) The expression “Medical Officer of Health” includes any duly qualified Medical Practitioner appointed or employed by a Local Authority to act in the execution of these Regula-

tions ; and any other person appointed or employed by the Local Authority under these Regulations to exercise any powers, or to discharge any duties assigned to the Medical Officer of Health.

Article II.—These Regulations shall come into operation on the First day of January, One thousand nine hundred and nine, and shall then and thereafter apply and have effect in relation to the District of every Local Authority throughout Scotland.

PART II

Article III.—(1) The Medical Officer of Health may examine an article of food which has been landed within the District.

Where the circumstances, in his opinion, so require, the Medical Officer of Health may examine the article of food while it is on board a ship within the District, or after it has been delivered overside, and before it has been landed.

(2) The Master of a ship, or a person having the custody of any lands or premises within the District, shall, at the request of the Medical Officer of Health, afford him access to the ship, or to the lands or premises, at any reasonable time, for the examination of an article of food which is on board the ship, or which has been deposited on the lands or premises.

(3) The importer, the Master of the ship, or a person having the custody of any lands or premises shall, at the request of the Medical Officer of Health, afford, by the convenient and suitable arrangement, unpacking or uncovering of so much of the cargo, or of any consignment delivered overside or landed, or deposited on the lands or premises, as comprises articles of food, all such facilities as the Medical Officer of Health may reasonably require for the examination of the article of food.

(4) If, on his examination, the Medical Officer of Health is of opinion that the article of food is unsound or unwholesome, or unfit for human consumption, he may himself, or by an assistant, seize and carry away the article of food, or he may by a notice in writing to the importer, or to the Master of the ship, or to any other person having charge of the article of food, require that, until the decision of a Sheriff, Magistrate, or Justice has been given in terms of Article IV. of these Regulations, the article of food shall not, without the permission of the Medical Officer of Health, be removed from the place at which the Medical Officer of Health has examined it, or from any other place which he specifies in the notice.

(5) Except where the Medical Officer of Health, at the request, or with the consent of the importer, allows an article of food, in relation to which a notice has been given in pursuance of subdivision (4) of this Article, to be removed for immediate destruction under the supervision of the Medical Officer of Health, or for the application and completion, under the like supervision, of any such process as the Medical Officer of Health approves, and as will effectually prevent the use of the article

of food for human consumption, the importer, the Master of the ship, or another person shall not, without the permission of the Medical Officer of Health, remove the article of food from the place at which the Medical Officer of Health has examined it, or from any other place specified in the notice, until the decision of a Sheriff, Magistrate, or Justice has been given in terms of Article IV. of these Regulations.

Article IV. - On the complaint of the Medical Officer of Health that an article of food seized and carried away in pursuance of subdivision (4) of Article III., or that an article of food in relation to which a notice has been given in pursuance of that subdivision, is unsound or unwholesome, or unfit for human consumption, a Sheriff, Magistrate, or Justice, if satisfied that the article of food is unsound or unwholesome, or unfit for human consumption, and that there is an absence of proof that the article of food is not intended for sale for human consumption, shall condemn the article of food and order it to be destroyed or disposed of under the supervision of the Medical Officer of Health by such means and in such a manner as to prevent its being used for human consumption.

Where, on any such complaint, a Sheriff, Magistrate, or Justice is satisfied that the article of food is unsound or unwholesome, or unfit for human consumption, but that it has been proved that the article of food is not intended for sale for human consumption, the Sheriff, Magistrate, or Justice shall make an order of dismissal of the complaint, and shall, in that order, set forth the description of, and such other details as will suffice to identify the article of food ; together with the name, description, and abode of the importer, and the name, description, and abode of the person to whom the article of food is to be delivered ; and shall forthwith furnish the Local Authority with a copy of the order.

Article V.—(1) Where the Medical Officer of Health has reason to believe that an article of food which has been landed within the District, and has not been examined by the Medical Officer of Health, is deposited on any lands or premises within the District, and access to the lands or premises at a reasonable time, for the examination of the article of food by the Medical Officer of Health, has been refused by the person having the custody of the lands or premises, the Medical Officer of Health may make complaint to a Sheriff, Magistrate, or Justice.

The Sheriff, Magistrate, or Justice may thereupon by a warrant authorise the Medical Officer of Health to enter the lands or premises, and to search for, seize, and carry away the article of food by an assistant or otherwise.

(2) The person having the custody of the lands or premises named in the warrant shall, at any reasonable time, afford all such facilities as the Medical Officer of Health may reasonably require to enable him, by an assistant or otherwise, to search for, seize, and carry away the article of food.

(3) If, as the result of a search on the authority of a warrant granted in pursuance of subdivision (1) of this Article, the Medical Officer of Health finds and examines the article of food, and, on his examination,

is of opinion that the article of food is unsound or unwholesome, or unfit for human consumption, he may himself or by an assistant, seize and carry away the article of food, or he may, by a notice in writing to the importer, or to the person having the custody of the lands or premises, require that, until the article of food has been examined by a Sheriff, Magistrate, or Justice, the article of food shall not, without the permission of the Medical Officer of Health, be removed from the place at which the Medical Officer of Health has examined it, or from any other place which he specifies in the notice.

(4) Except where the Medical Officer of Health, at the request or with the consent of the importer, allows an article of food in relation to which a notice has been given in pursuance of subdivision (3) of this Article, to be removed for immediate destruction under the supervision of the Medical Officer of Health, or for the application and completion, under the like supervision, or any such process as the Medical Officer of Health approves, and as will effectually prevent the use of the article of food for human consumption, the importer or another person shall not, without the permission of the Medical Officer of Health, remove the article of food from the place at which the Medical Officer of Health has examined it, or from any other place specified in the notice, until the article of food has been examined by a Sheriff, Magistrate, or Justice.

(5) On production of the warrant granted in pursuance of subdivision (1) of this Article, and on the complaint of the Medical Officer of Health that an article of food which has been seized and carried away in pursuance of the warrant, or in relation to which a notice has been given in pursuance of subdivision (3) of this Article, is unsound or unwholesome, or unfit for human consumption, a Sheriff, Magistrate, or Justice, if satisfied that the article of food is unsound or unwholesome, or unfit for human consumption, and that there is an absence of proof that the article of food is not intended for sale for human consumption, shall condemn the article of food and order it to be destroyed or disposed of under the supervision of the Medical Officer of Health by such means and in such a manner as to prevent its being used for human consumption.

Where, on any such complaint, a Sheriff, Magistrate, or Justice is satisfied that the article of food is unsound or unwholesome or unfit for human consumption, but that it has been proved that the article of food is not intended for sale for human consumption, the Sheriff, Magistrate, or Justice shall make an order of dismissal of the complaint, and shall in that order set forth the description of, and such other details as will suffice to identify the article of food; together with the name, description, and abode of the importer, and the name, description, and abode of the person to whom the article of food is to be delivered; and shall forthwith furnish the Local Authority with a copy of the order.

PART III

Article VI.—Where, in pursuance of these Regulations, an article of food is destroyed or otherwise disposed of under the supervision of the Medical Officer of Health, the Local Authority before the destruction or other disposal of the article of food shall cause the description of, and such other details as will suffice to identify the article of food, to be duly recorded, and shall keep the record in their custody for a period of not less than twelve months.

Article VII.—(1) The Medical Officer of Health may take a sample from a consignment of articles of food for any purpose of these Regulations, and, subject to subdivision (2) of this Article, shall dispose of the sample in such manner as the Local Authority direct.

(2) Where the Medical Officer of Health who takes a sample from a consignment of articles of food is of opinion that special procedure is necessary for the examination of the articles of food, or where, at the request of the importer, the Medical Officer of Health who takes any such sample has recourse to special procedure for the examination of the articles of food, the importer or another person who has the custody or control of the consignment shall, as regards the convenient and suitable arrangement and the place of deposit of the articles of food comprised in the consignment, afford during such time not exceeding forty-eight hours as the Medical Officer of Health by notice in writing appoints, or during any longer time which the Medical Officer of Health by notice in writing appoints, and to which the importer consents, all such facilities as the Medical Officer of Health may reasonably require for the completion of his examination of the articles of food.

Article VIII.—A notice which, in pursuance of these Regulations, the Medical Officer of Health is empowered to give may be given by properly addressing, prepaying, and posting a letter containing the notice.

Article IX.—A person, in relation to anything within his knowledge, shall answer truly all such questions put to him by, and give all such information to the Medical Officer of Health as are necessary for any purpose of these Regulations; and a person, in relation to anything within his knowledge and material to any purpose of proceedings in pursuance of these Regulations, shall make a true statement, and truly answer any question, when required or put by a Sheriff, Magistrate, or Justice, or other competent authority in the course and for any purpose of those proceedings.

Article X.—(1) The Local Authority may appoint and pay a legally qualified Medical Practitioner to act in the execution of these Regulations, either in the place of, or as an Assistant to the Medical Officer of Health.

(2) The Local Authority may also appoint or employ and pay a person to act, under the direction of the Medical Officer of Health, in the exercise of any such powers or in the discharge of any such duties of

the Medical Officer of Health under these Regulations as the Local Authority assign to the person so appointed.

Article XI.—Two or more Local Authorities shall act together for the purposes of these Regulations in every case in which We, by Order, require any such joint action.

In every such case these Regulations shall, in relation to each Local Authority, and to each District of a Local Authority to whom and to which the Order applies, have effect subject to such adaptations and modifications as are made by the Order.

Article XII.—(1) If a difference arises in relation to any subject-matter of, or to anything done under these Regulations, the difference may, on the application of all the parties affected, be referred to Us for determination.

(2) It shall be at Our option to determine any such difference as arbitrators or otherwise; and, if We elect to determine the difference as arbitrators, the provisions of the Regulation of Railways Act, 1868, respecting arbitrations by the Board of Trade, and the enactments amending those provisions shall apply, as if they were re-enacted in these Regulations, and in terms made applicable to Us, and to the determination of the difference.

(3) Where We elect to determine any such difference otherwise than as arbitrators, We may by Our Order determine the difference, and Our determination shall be final and conclusive.

(4) Every Order made by Us in pursuance of this Article shall have effect as if the Order were enacted in these Regulations.

Article XIII.—(1) All powers given by these Regulations shall be deemed to be in addition to, and not in derogation of any other powers conferred by Regulations under the Public Health (Regulations as to Food) Act, 1907; and those other powers may be exercised in the same manner as if these Regulations had not been made.

(2) Where the duties of an Officer of Customs with respect to the examination of a cargo or consignment comprising an article of food have not been wholly discharged, an examination of the article of food for the purposes of these Regulations shall not be made without the consent of the Officer of Customs; but every Officer of Customs shall afford such facilities as the circumstances require for the examination of the article of food in pursuance of these Regulations.

Article XIV.—These Regulations may be cited as “The Public Health (First Series: Unsound Food) Regulations (Scotland), 1908.”

Given under the Seal of Office of the Local Government Board for Scotland this Twenty-fifth day of November, in the year One thousand nine hundred and eight.

(L.S.)

J. Patten MacDougall,
Vice-President.

G. Falconar-Stewart,
Secretary.

NOTICE. The Public Health (Scotland) Act, 1897, provides by Section 87 that if any person wilfully neglects or refuses to obey or carry out, or obstructs the execution of, any regulation made under Part IV. of the Act, he shall be liable to a penalty not exceeding *one hundred pounds*, and in the case of a continuing offence to a further penalty not exceeding *fifty pounds* for every day during which the offence continues; and any such penalty shall be recoverable with expenses at the instance of the Lord Advocate on behalf of the Board, or by any Local Authority with the consent of the Board in any competent Court. The power of making regulations under Part IV. of the Public Health (Scotland) Act, 1897, is enlarged by the Public Health (Regulations as to Food) Act, 1907.

[5]

Local Government Board,

Edinburgh,

27th November, 1908.

PUBLIC HEALTH (REGULATIONS AS TO FOOD)
ACT, 1907

SIR,

I am directed to transmit for the information of the Local Authority copy (in duplicate) of "The Public Health (First Series : Unsound Food) Regulations (Scotland), 1908," and of "The Public Health (Foreign Meat) Regulations (Scotland), 1908," which the Board have made under the above-named Act.

THE PUBLIC HEALTH (FIRST SERIES : UNSOUND FOOD) REGULATIONS
(SCOTLAND), 1908

Object of the Regulations

These Regulations, which apply to all articles of food brought by ship from any place outwith Scotland, have been framed with the object of securing that articles of food, when they are unsound, unwholesome, or unfit for human consumption, and, as part of the cargo of a ship, are brought to a place in Scotland either as a place of destination or as a place of deposit for transmission to a place of destination elsewhere in the United Kingdom, shall be dealt with at the port of discharge. This procedure is necessary for the prevention of danger to the public health from the consumption of unsound or unwholesome food.

Date on which the Regulations take effect

The Regulations will take effect on and after 1st January, 1909, and in the interests of public health and of uniformity of administration it is desirable that the arrangements necessary to give effect to them should be made at an early date in all the districts to which they apply.

Inspection

Powers of inspection for the purposes of the Regulations are conferred upon the Medical Officer of Health, or any legally qualified medical practitioner appointed by the Local Authority to act in the execution of the Regulations, and upon any other person appointed or employed by the Local Authority under the Regulations to exercise any powers or discharge any duties assigned to the Medical Officer of Health. The appointment and payment of such persons is authorised by Article X. of the Regulations, and it is open to the Local Authority to appoint the Sanitary Inspector, or the Veterinary Surgeon approved in terms of Section 43 of the Public Health (Scotland) Act, 1897, to carry out the Regulations. The officer so appointed must, however, act under the direction of the Medical Officer of Health.

Place and Method of Inspection

The Medical Officer of Health is authorised by Article III. to examine articles of food that have been landed within the district of the Local Authority. If the circumstances, in his opinion, so require, he may also examine such articles before they have been landed. In this connection, reference should be made to the paragraph below headed "Communication with Customs Officers."

The same Article provides for necessary facilities being given for the purposes of his examination in the matter of convenient arrangement, unpacking, and the like, and Article V. authorises him to apply to a Sheriff, Magistrate, or Justice for a warrant to enter premises in special cases.

The Board consider it important that, in determining the place and manner of examination, the Medical Officer of Health should give full consideration to the circumstances in which particular foods are brought into or deposited within the district. It will be his object not only to examine under the conditions that are most favourable to efficient inspection but, in the case of perishable articles and food-stuffs in course of transit, so to conduct the examination as to avoid any needless detention of goods or unnecessary inconvenience to the traders concerned.

Inspection of food-stuffs should in ordinary cases be made after they have been landed. Exercise of the powers of inspection on the ship or on lighters and barges may, however, be a matter of importance in special cases, as where the vessel discharges a cargo of food-stuffs over-side.

Taking of Samples

In order to meet the case of particular consignments where it is necessary that special examination should be made (*e.g.*, in the laboratory), powers of sampling are conferred by Article VII. The Board consider it important that, when samples of food-stuffs themselves possess a material money value, they should be taken only when there is a substantial

reason for this course, and a record should be kept of the nature and method of disposal of any such samples. Vouchers in respect of samples taken under this Article should be supplied in all cases on the request of the owner or other person having charge of the goods.

Article VII. also provides for the temporary detention of consignments pending the completion of the examination of the samples taken. Such detention should, however, not be regarded as a necessary consequence of taking samples.

Communication with Customs Officers

Attention is drawn to Article XIII. (2), which provides that in certain circumstances the examination of an article of food by an Officer of the Local Authority shall not be made without the consent of the Officer of Customs. The Officer of Customs is, however, required to afford facilities for such examination, and the Board would suggest that the Medical Officer of Health should confer from time to time, as circumstances require, with the Collector or other Chief Officer of Customs acting in his district, so as to secure co-operation between the officers concerned.

Procedure in connection with Unsound Food

Under Article III. the Medical Officer of Health is empowered, himself or by an assistant, to seize and carry away an article of food that, in his opinion, is unsound or unwholesome, or unfit for human consumption, in order that application may be made to a Sheriff, Magistrate, or Justice for an order of condemnation. Alternatively, the Medical Officer of Health, by notice to the importer or to any other person having charge of the article, may require that, until the decision of a Sheriff, Magistrate, or Justice has been given in terms of Article IV., it shall not be removed from the place specified in the notice without the permission of the Medical Officer of Health. Such notice, however, does not preclude the removal of the food in question, at the request or with the consent of the importer, and with the permission of the Medical Officer of Health, for the purpose of its destruction or for the application of a process that will effectually prevent the article from being used for human consumption.

In order that Revenue interests may not be jeopardised, dutiable articles in Customs charge should not be seized or removed without reference to the Local Customs Authorities.

The Sheriff, Magistrate, or Justice, if satisfied as regards the unsoundness of the particular food concerned, is required by Articles IV. and V. to condemn the food and order its destruction or its disposal under the supervision of the Medical Officer of Health by such means and in such a manner as to prevent its being used for human consumption. If, however, evidence satisfactory to the Sheriff, Magistrate, or Justice is adduced that the food in question, although unsound, is not intended for sale for human consumption, he is required to make an order dismissing the complaint. A description of the food in question is to be given in

any such order of dismissal, and a copy of the order is to be furnished to the Local Authority. The Board would recommend that a copy of the order be sent by the Local Authority to the Local Authority of the district in which the person to whom the article of food is to be delivered resides.

The Board consider it important that the Medical Officer of Health, in determining the place to be specified in any notice, and in taking other action in regard to food ascertained or suspected to be unsound, should keep in mind considerations such as those above specified in the third paragraph of the observations under the heading "Place and Method of Inspection." In the case of any articles that he has seized and carried away, he should afford all possible facilities to the importer to make his own examination of the foods in question.

Records and Reports

Article VI. requires the Local Authority to keep for a period of not less than twelve months a record of any article of food destroyed or disposed of in pursuance of the Regulations. In this connection the Board would suggest that an abstract of these records should be furnished by the Medical Officer of Health in his Annual Report to the Local Authority, which should also include an account of proceedings taken by him, or under his direction, during the year to give effect to the Regulations.

The Local Authority will no doubt wish to accede to reasonable applications by importers for documentary evidence that particular foods or consignments have been destroyed or disposed of.

Provision for determination of Differences, &c.

Article XII. empowers the Board, on the application of all the parties affected, to determine, either as arbitrators or otherwise, any difference arising in relation to any subject-matter of, or anything done under, the Regulations.

Communication in special cases with the Board

With a view to securing greater efficiency and uniformity of inspection under these Regulations, and of taking any necessary action in the interests of the country as a whole, the Board would be glad at any time to receive information in cases where, as a result of examination of foods under the Regulations, special danger to the public health is apprehended, or the foods have been found to present unusual or suspicious characteristics.

THE PUBLIC HEALTH (FOREIGN MEAT) REGULATIONS (SCOTLAND),
1908

Object of the Regulations

The Board have given attention to the danger to public health entailed by the unrestricted importation of certain kinds of meat foods, and to the circumstance that equitable and efficient administration by Local

Authorities in respect of disease and unsoundness in meat may be seriously hampered by such importation.

The Regulations are designed to deal with foreign boneless meat imported in the form of scraps, trimmings, or other pieces not sufficiently identifiable with definite parts of a carcass, and not before importation made ready for human consumption in the form of a sausage, or other prepared or manufactured article of food ; with imported tripe, tongues, or kidneys to which certain chemical preservatives have been applied ; and with severed parts of a pig not prepared before importation as bacon or ham, and not contained in a package with an " official certificate " of the kind referred to below impressed on it, or affixed or attached to it. These meats are classed together in the Regulations as " Foreign Meat of Class I.," and unless the importer of meat of this class exports it at his own expense, or furnishes proof, in the manner prescribed by the Regulations, that it is not intended for sale for human consumption, the meat is required to be destroyed. As regards boneless meat, the Board specially desire to point out that the effect of the Regulations is not to prohibit entirely the importation of such meat. If it is imported in such shape or in such condition as to afford sufficient means of identification with definite parts of a carcass, it will not come within the definition of " Foreign Meat of Class I."

With a view to stopping the importation of carcasses of pigs from which the lymphatic glands about the throat and elsewhere are absent (thereby preventing the detection of evidence of tuberculosis and other disease in the carcass), the Regulations provide that carcasses of pigs, not prepared as bacon or ham, but imported without the lymphatic glands and without the head in its natural state of attachment (Foreign Meat of Class II.), shall be dealt with in a similar manner to Foreign Meat of Class I.

Foreign Meat of Class III. consists of the severed parts of a pig, not prepared as bacon or ham, and not being Foreign Meat of Class I., but contained in a package with an " official certificate " attached as evidence that the pig from which the meat is derived has been certified by a competent authority in the place of origin to be free from disease at the time of slaughter, and that the meat has been certified by the like authority to have been dressed or prepared, and packed with the needful observance of all requirements for the prevention of danger arising to public health from the meat as an article of food. The Board hope at an early date to define and publish in the manner prescribed by Article I. (e) of the Regulations the " official certificates " that are to be accepted for this purpose.

A further object of the Regulations is to provide means by which foreign meat generally when diseased, unsound, unwholesome, or unfit for human consumption may be detected and dealt with by public health authorities at the place of importation.

Date on which the Regulations take effect

The Regulations will take effect on and after 1st January 1909, and in the interests of public health and of uniformity of administration it is desirable that the arrangements necessary to give effect to them should be completed before that date in all the districts to which they apply.

Inspection

Powers of inspection for the purposes of the Regulations are conferred upon the Medical Officer of Health, or any legally qualified medical practitioner appointed by the Local Authority to act in the execution of the Regulations, and upon any other person appointed or employed by the Local Authority under the Regulations to exercise any powers or discharge any duties assigned to the Medical Officer of Health. The appointment and payment of such persons is authorised by Article XV. of the Regulations, and it is open to the Local Authority to appoint the Sanitary Inspector, or the Veterinary Surgeon approved in terms of Section 43 of the Public Health (Scotland) Act, 1897, to carry out the Regulations. The officer so appointed must, however, act under the direction of the Medical Officer of Health.

Procedure under the Regulations

The Regulations require by Article III. (2) that the Officer of Customs shall cause to be detained, for examination by the Medical Officer of Health of the Local Authority, any foreign meat that in his opinion has the characteristics of foreign meat of either Class I. or Class II.

If he finds that the cargo comprises Foreign Meat of Class III. or Foreign Meat Unclassed, he may allow it to be removed unless he is of opinion that the meat requires examination by the Medical Officer of Health.

It will be the duty of the Medical Officer of Health, on being informed by the Customs Officer of the detention, to examine the meat and to give either a notice forbidding its removal for any purpose other than exportation, or a certificate that it may be removed. But he is not to give a certificate and must give a notice as regards Foreign Meat of Class I. or Class II., and also as regards Foreign Meat of Class III. or Foreign Meat Unclassed if it is, in his opinion, notwithstanding the official certificate, diseased, unsound, unwholesome, or unfit for human consumption.

The Regulations as to the action to be taken where the Medical Officer of Health gives a notice of the kind referred to will be found in Articles VI. to IX. As regards the last paragraph of Article VIII., the Board would recommend that a copy of the order be sent by the Local Authority to the Local Authority of the district in which the person to whom the consignment is to be delivered resides.

Article X. requires a record to be kept of foreign meat destroyed, and Article XII. enables the Medical Officer of Health to take samples of

foreign meat for the purpose of the Regulations. He is to dispose of the samples in such manner as the Local Authority direct.

Under Article IV., it will be observed, the Medical Officer of Health is empowered to examine any foreign meat that is still in the District, even though its removal from the ship, or from the place of delivery or of landing, may have been allowed, and, if he is of opinion that it should not be removed to a place of destination for any purpose other than exportation, he is to give notice forbidding its removal except for exportation.

Provision for determination of Differences, &c.

Article XVII. empowers the Board, on the application of all the parties affected, to determine, either as arbitrators or otherwise, any difference arising in relation to any subject-matter of, or anything done under, the Regulations.

STATUTORY RULES AND ORDERS, 1908

No. $\frac{1180}{S. 85}$

PUBLIC HEALTH, SCOTLAND

Unsound Food

THE PUBLIC HEALTH (FOREIGN MEAT) REGULATIONS (SCOTLAND), 1908
DATED NOVEMBER 25, 1908

To all Local Authorities in Scotland ;—

To all Officers of Customs ;—

To all Medical Officers of Health ;—

To all Masters of Ships ;—

And to all others whom it may concern.

Whereas by Section 1 of the Public Health (Regulations as to Food) Act, 1907, it is enacted as follows :—

“(1) The power of making regulations under the Public Health Act, 1896, and the enactments mentioned in that Act, shall include the power of making regulations authorising measures to be taken for the prevention of danger arising to public health from the importation, preparation, storage, and distribution of articles of food or drink (other than drugs or water) intended for sale for human consumption, and without prejudice to the generality of the powers so conferred, the regulations may—

“(a) provide for the examination and taking of samples of any such articles ;

“(b) apply, as respects any matters to be dealt with by the regulations, any provision in any Act of

- “ Parliament dealing with the like matters, with
 “ the necessary modifications and adaptations ;
 “ (c) provide for the recovery of any charges authorised
 “ to be made by the regulations for the purposes
 “ of the regulations or any services performed
 “ thereunder ;
 “ (2) For the purposes of regulations made under this Act, articles
 “ commonly used for the food or drink of man shall be
 “ deemed to be intended for sale for human consumption
 “ unless the contrary is proved.
 “ (3) In the application of this Act to Scotland, Part IV. of the
 “ Public Health (Scotland) Act, 1897, shall be substituted
 “ for the Public Health Act, 1896.”

And whereas by Section 85 of the Public Health (Scotland) Act, 1897, it is enacted that Regulations of the Local Government Board for Scotland made in pursuance of Part IV. of the said Act may provide for such Regulations being enforced and executed by the Officers of Customs, as well as by other Authorities and Officers, and by subsection 2 of the aforesaid section it is provided that the Regulations shall be subject to the consent, so far as they apply to the Officers of Customs, of the Commissioners of His Majesty's Customs ;

And whereas, for the prevention of danger arising to public health, it is expedient that such Regulations as are hereinafter set forth be made in relation to articles of food ;

And whereas the Commissioners of His Majesty's Customs have signified their consent to the said Regulations, so far as they apply to the Officers of Customs :

Now therefore, We, the Local Government Board for Scotland, by this Our Order, and in the exercise of the powers conferred upon Us by the Public Health (Scotland) Act, 1897, and the Public Health (Regulations as to Food) Act, 1907, and of every other power enabling Us in that behalf, do make the following Regulations, that is to say:—

Article I.—In these Regulations, unless the contrary intention appears—

- (a) The expression “ cattle ” includes a bull, cow, ox, heifer, calf, ram, ewe, wether, goat, and kid ;
- (b) The expression “ pig ” includes a boar, sow, and hog ;
- (c) The expression “ meat ” means pork, the flesh of cattle, any other edible part of a pig or of cattle, or a substance, compound, material, or article of which pork, or the flesh of cattle or any other edible part of a pig or of cattle is an ingredient ;
- (d) The expression “ foreign ” used in relation to meat means brought from a place situate elsewhere than in the United Kingdom, the Channel Islands, or the Isle of Man ;
- (e) The expression “ Official Certificate ” used in relation to foreign meat or in relation to a box, case, receptacle, or package containing foreign meat, means a certificate, label, mark,

stamp, or other voucher which, by a notice published in the Edinburgh Gazette at any time during the period of twelve months beginning on the First day of October, One thousand nine hundred and eight, is declared to be admissible during the said period in the manner, to the extent, and subject to the rules and conditions, prescribed in that notice, as evidence that the cattle or pig from which the meat is derived has been certified by a competent authority in the place of origin to be free from disease at the time of slaughter, and that the meat has been certified by the like authority to have been dressed or prepared, and packed with the needful observance of all requirements for the prevention of danger arising to public health from the meat as an article of food ;

(f) The expression " Foreign Meat of Class I." means foreign meat in the form—

(A) Of scrap meat, namely, meat which, whether it is fresh, or has, before importation, been subjected to a process of freezing or other refrigeration, or to chemical or other treatment, with or without the addition of any preservative or colouring substance—

(i) consists of scraps, trimmings, or other pieces of such shape or in such condition as to afford insufficient means of identification with definite parts of a carcase ;

(ii) has not, before importation, been made ready for human consumption in the form of a sausage, or of another prepared or manufactured article of food ; and

(iii) is without bone in its natural state of attachment ;

or

(B) Of tripe, namely, any edible part of the stomach, or Of a tongue, or kidney,

to which formalin, or a solution, or other preparation of, or comprising formic aldehyde ; or a compound containing fluorine or boron ; or salicylic acid, formic acid, sulphurous acid, benzoic acid, or any compound of any such acid has been applied ;

or

(c) Of severed parts of the carcase of a pig, or of other edible parts of a pig, which have not, before importation, been salted, cured, pickled, dried, or smoked, or otherwise prepared as bacon or ham, and which are not contained in a box, case, receptacle, or package with an official certificate impressed thereon, or affixed or attached thereto ;

(g) The expression " Foreign Meat of Class II." means foreign meat which, being in the form of the entire carcase of a pig, has not, before importation, been salted, cured, pickled, dried, or smoked, or otherwise prepared as bacon or ham, and is

without the head in its natural state of attachment to the carcase, and is without the lymphatic glands about the throat and any other part of the carcase in their natural position ;

- (h) The expression "Foreign Meat of Class III." means foreign meat which is in the form of severed parts of the carcase of a pig, or of other edible parts of a pig, which has not, before importation, been salted, cured, pickled, dried, or smoked, or otherwise prepared as bacon or ham, which is not and does not comprise any foreign meat of Class I., and which is contained in a box, case, receptacle, or package with an official certificate impressed thereon, or affixed or attached thereto ;
- (i) The expression "Foreign Meat Unclassed " means foreign meat other than foreign meat of Class I., foreign meat of Class II., or foreign meat of Class III. ;
- (j) The expression "importer" means any person in the United Kingdom who, either as owner or consignee, agent or broker, is entitled to the possession, custody, or control of any foreign meat ;
- (k) The expression "ship" includes any sailing or steam ship, vessel, or boat not belonging to His Majesty or any Foreign Government ;
- (l) The expression "Officer of Customs" includes any person acting under the authority of the Commissioners of His Majesty's Customs ;
- (m) The expression "Master" used in relation to a ship includes the officer, or other person for the time being in charge or command of the ship ;
- (n) The expression "Local Authority" has the same meaning as in the Public Health (Scotland) Act, 1897, and includes any Port Local Authority or Joint Port Local Authority constituted in terms of that Act ;
- (o) The expression "Medical Officer of Health " includes any duly qualified Medical Practitioner appointed or employed by a Local Authority to act in the execution of these Regulations ; and any other person appointed or employed by the Local Authority under these Regulations to exercise any powers, or to discharge any duties assigned to the Medical Officer of Health.

Article II.—These Regulations shall come into operation on the First day of January, One thousand nine hundred and nine, and shall then and thereafter apply and have effect in relation to the District of every Local Authority throughout Scotland, and shall be enforced and executed by every Officer of Customs, by every Local Authority, and by the Medical Officer of Health, and where the circumstances so require, by any other Officer of a Local Authority.

Article III.—(1) The Officer of Customs, on the arrival of a ship within the District, shall ascertain whether the cargo of the ship comprises any foreign meat.

(2) Where the Officer of Customs finds, or has reason to believe, that the cargo comprises foreign meat having, according to the best opinion which, in the circumstances of the case, his knowledge enables him to form, the characteristics of Foreign Meat of Class I., or of Foreign Meat of Class II., the Officer of Customs by a notice in writing given to the Master or to the importer shall require that, until the meat has been examined by the Medical Officer of Health, it shall not be removed from the ship, or from the place of delivery or of landing, or from any other place which the Officer of Customs specifies in the notice.

The Officer of Customs shall at the same time inform the Medical Officer of Health to the effect of the notice.

(3) Where the Officer of Customs finds that the cargo comprises Foreign Meat of Class III., or Foreign Meat Unclassed, the Officer of Customs, unless, by reason of facts brought to his knowledge, or of representations made to him, he is of opinion that the meat requires examination by the Medical Officer of Health, may allow the meat to be removed from the ship, or from the place of delivery or of landing without any such examination.

Where the Officer of Customs is of opinion that the meat requires examination by the Medical Officer of Health, the Officer of Customs by a notice in writing shall require that, until the meat has been examined by the Medical Officer of Health, it shall not be removed from the ship, or from the place of delivery or of landing, or from any other place which the Officer of Customs specifies in the notice.

The Officer of Customs shall at the same time inform the Medical Officer of Health to the effect of the notice.

(4) Where any notice has been given in relation to any foreign meat by the Officer of Customs, in pursuance of subdivision (2) or of subdivision (3) of this Article, a person shall not, without the express permission of the Officer of Customs, remove the meat, at any time before its examination by the Medical Officer of Health, from the ship, or from the place of delivery or of landing, or from any other place specified in the notice.

(5) On being informed by the Officer of Customs to the effect of the notice given by him in pursuance of subdivision (2) or of subdivision (3) of this Article, the Medical Officer of Health shall forthwith proceed to examine the foreign meat to which the notice relates.

If, upon his examination of the meat, the Medical Officer of Health is of opinion that the meat may be removed to a place of destination in Scotland for any purpose other than exportation, he shall give a certificate in writing to that effect.

If, upon his examination of the meat, the Medical Officer of Health is of opinion that the meat should not be removed to a place of destination in Scotland for any purpose other than exportation, he shall by a notice

in writing forbid the removal of the meat for any purpose other than exportation.

(6) Every notice given by the Officer of Customs, and every certificate and every notice given by the Medical Officer of Health in pursuance of this Article shall set forth the description of the foreign meat to which the notice or certificate relates, and such other details as will suffice to identify the particular consignment.

The Medical Officer of Health shall give every such certificate in duplicate, and every such notice in triplicate.

The Medical Officer of Health shall give one copy of the certificate to the Officer of Customs, and one copy to the importer.

The Medical Officer of Health shall give one copy of the notice to the Officer of Customs, one copy to the importer, and one copy to the Local Authority.

Article IV.—(1) Where the Medical Officer of Health has ascertained that any foreign meat which the Officer of Customs has allowed to be removed is still within the District, the Medical Officer of Health may proceed forthwith to examine the meat.

If, upon his examination of the meat, the Medical Officer of Health is of opinion that the meat should not be removed to a place of destination in Scotland for any purpose other than exportation, he shall by a notice in writing forbid the removal of the meat for any purpose other than exportation.

(2) Every notice given by the Medical Officer of Health in pursuance of this Article shall set forth the description of the foreign meat to which the notice relates, and such other details as will suffice to identify the particular consignment.

The Medical Officer of Health shall give every such notice in duplicate.

The Medical Officer of Health shall give one copy of the notice to the importer, and one copy to the Local Authority.

Article V.—The Medical Officer of Health in determining whether, in the case of any foreign meat to which these Regulations apply, he shall give a certificate or a notice in pursuance of these Regulations, shall observe and comply with the following rules, that is to say :—

He shall not give a certificate and shall give a notice as regards Foreign Meat of Class I. and Foreign Meat of Class II. :

He shall not give a certificate and shall give a notice as regards Foreign Meat of Class III, or Foreign Meat Unclassed if, in his opinion, the meat, notwithstanding the official certificate, is diseased, unsound, unwholesome, or unfit for human consumption.

Article VI.—The Local Authority, within twelve hours after the receipt of a copy of a notice by the Medical Officer of Health, in pursuance of subdivision (5) of Article III., or of subdivision (1) of Article IV., with respect to any foreign meat, shall give to the importer notice in writing which, in addition to such other particulars (if any) as the Local Authority deem necessary or expedient, shall state that, unless, within twelve

hours after the receipt of the notice, the importer gives to the Local Authority a written undertaking to the effect that, subject to compliance in all respects with the requirements of any Regulations made under the Public Health (Regulations as to Food) Act, 1907, and in force for the time being, he will export the meat at his own expense, or, in proceedings before a Sheriff, Magistrate, or Justice in pursuance of those Regulations, he will prove (1) that the meat is not diseased, unsound, unwholesome, or unfit for human consumption, or (2) that it is not intended for sale for human consumption, the Local Authority will cause the meat to be destroyed under the supervision of the Medical Officer of Health.

Article VII.—(1) Where, in pursuance of Article VI., a notice has been given by the Local Authority with respect to any foreign meat and no such written undertaking as is described in the notice has been received by the Local Authority within the time specified in the notice, the Local Authority shall forthwith cause the meat to which the notice relates to be destroyed, under the supervision of the Medical Officer of Health.

(2) Where, in pursuance of Article VI., a notice has been given by the Local Authority with respect to any foreign meat, and within the time specified in the notice, the Local Authority have received such a written undertaking as is described in the notice to the effect that the importer will at his own expense export the meat, and within three days after the receipt by the Local Authority of the undertaking the importer fails to export the meat, the Local Authority shall cause the meat to be destroyed under the supervision of the Medical Officer of Health.

Article VIII.—(1) Where, in pursuance of Article VI., a notice has been given by the Local Authority with respect to any foreign meat, and within the time specified in the notice, the Local Authority have received such a written undertaking as is described in the notice to the effect that, subject to compliance in all respects with any Regulations made under the Public Health (Regulations as to Food) Act, 1907, and in force for the time being, the importer, in proceedings before a Sheriff, Magistrate, or Justice, in pursuance of those Regulations, will prove (1) that the meat is not diseased, unsound, unwholesome, or unfit for human consumption, or (2) that it is not intended for sale for human consumption, the Local Authority shall within twenty-four hours after the receipt of the written undertaking take such steps as are prescribed or authorised by this Article to obtain the decision of a Sheriff, Magistrate, or Justice with respect to the subject-matter of the undertaking of the importer or to any subject-matter of this Article.

(2) For the purposes of this Article, an application may be made by the Local Authority to any Sheriff, Magistrate, or Justice having jurisdiction in the District, who shall direct any foreign meat to be destroyed by the Local Authority under the supervision of the Medical Officer of Health, if the Sheriff, Magistrate, or Justice is satisfied that, in pursuance of any Regulations made under the Public Health (Regulations as to Food) Act, 1907, and in force for the time being, the removal of the meat to a place

of destination in Scotland for any purpose other than exportation has been forbidden, and that there is an absence of proof (1) that the meat is not diseased, unsound, unwholesome, or unfit for human consumption, or (2) that it is not intended for sale for human consumption.

Where the Sheriff, Magistrate, or Justice is satisfied that it has been proved (1) that the meat is not diseased, unsound, unwholesome, or unfit for human consumption, or (2) that it is not intended for sale for human consumption, he shall make an order of dismissal of the application. By that order the Sheriff, Magistrate, or Justice shall direct that the prohibition of the removal of the meat in pursuance of any such Regulation as aforesaid shall cease to have effect.

The Sheriff, Magistrate, or Justice shall further set forth in the order the description of and such other details as will suffice to identify the particular consignment of meat; together with the name, description, and abode of the importer, and the name, description, and abode of the person to whom the consignment of meat is to be delivered; and shall forthwith furnish the Local Authority with a copy of the order.

Article IX.—Where a notice forbidding the removal of any foreign meat has been given by the Medical Officer of Health in pursuance of subdivision (5) of Article III., or of subdivision (1) of Article IV., and a Sheriff, Magistrate, or Justice has not, in pursuance of subdivision (2) of Article VIII., directed that the prohibition of the removal of the meat shall cease to have effect, a person shall not at any time remove the meat to a place of destination in Scotland for any purpose other than exportation.

Article X.—Where the Local Authority in pursuance of these Regulations cause any foreign meat to be destroyed, the Local Authority, before the destruction of the meat, shall cause the description of, and such other details as will suffice to identify the particular consignment to be duly recorded, shall give to the importer a notice in writing of the destruction of the meat, including the contents of the record, and shall keep the record in their custody for a period of not less than twelve months.

Article XI.—A certificate or notice which, in pursuance of these Regulations, the Medical Officer of Health is empowered or required, or the Local Authority are required to give, may be given by properly addressing, prepaying, and posting a letter containing the certificate or notice.

Article XII.—The Medical Officer of Health may, for any purpose of these Regulations, take a sample of foreign meat on board a ship, or delivered overside or landed within the District, and shall dispose of the sample in such manner as the Local Authority direct.

Article XIII.—A Master of a ship or another person shall not knowingly land or put on shore within the District of a Local Authority any foreign meat which, in compliance with a requisition of a Local Authority in pursuance of these Regulations, the importer has caused to be exported.

Article XIV.—A person, in relation to anything within his knowledge, shall answer truly all such questions put to him by, and give all such

information to, the Officer of Customs or the Medical Officer of Health as are necessary for any purpose of these Regulations ; and a person, in relation to anything within his knowledge, and material to any purpose of proceedings in pursuance of these Regulations, shall make a true statement, and truly answer any question when required or put by a Sheriff, Magistrate, or Justice or other competent authority in the course and for any purpose of those proceedings.

Article XV.—(1) The Local Authority may appoint and pay a legally qualified Medical Practitioner to act in the execution of these Regulations, either in the place of, or as an Assistant to, the Medical Officer of Health.

(2) The Local Authority may also appoint or employ and pay a person to act, under the direction of the Medical Officer of Health, in the exercise of any such powers or in the discharge of any such duties of the Medical Officer of Health under these Regulations as the Local Authority assign to the person so appointed.

Article XVI.—Two or more Local Authorities shall act together for the purposes of these Regulations in every case in which We, by order, require any such joint action.

In every such case, these Regulations shall, in relation to each Local Authority and to each District of a Local Authority to whom and to which the Order applies, have effect subject to such adaptations and modifications as are made by the Order.

Article XVII.—(1) If a difference arises in relation to any subject-matter of, or to anything done under these Regulations, the difference may, on the application of all the parties affected, be referred to Us for determination.

(2) It shall be at Our option to determine any such difference as arbitrators or otherwise ; and, if We elect to determine the difference as arbitrators, the provisions of the Regulation of Railways Act, 1868, respecting arbitrations by the Board of Trade, and the enactments amending those provisions shall apply as if they were re-enacted in these Regulations, and in terms made applicable to Us, and to the determination of the difference.

(3) Where We elect to determine any such difference otherwise than as arbitrators, We may by Our Order determine the difference, and Our determination shall be final and conclusive.

(4) Every Order made by Us in pursuance of this Article shall have effect as if the Order were enacted in these Regulations.

Article XVIII.—These Regulations may be cited as “The Public Health (Foreign Meat) Regulations (Scotland), 1908.”

Given under the Seal of Office of the Local Government Board for Scotland, this Twenty-fifth day of November, in the year One thousand nine hundred and eight.

(L.S.)

J. Patten MacDougall,
Vice-President.

G. Falconar-Stewart,
Secretary.

NOTICE. The Public Health (Scotland) Act, 1897, provides by Section 87 that if any person wilfully neglects or refuses to obey or carry out, or obstructs the execution of, any regulation made under Part IV. of the Act, he shall be liable to a penalty not exceeding *one hundred pounds*, and in the case of a continuing offence to a further penalty not exceeding *fifty pounds* for every day during which the offence continues : and any such penalty shall be recoverable with expenses at the instance of the Lord-Advocate on behalf of the Board, or by any Local Authority with the consent of the Board in any competent Court. The power of making regulations under Part IV. of the Public Health (Scotland) Act, 1897, is enlarged by the Public Health (Regulations as to Food) Act, 1907.

FOREIGN MEAT REGULATIONS

From Regulations issued on September 12, 1908, "to all Port Sanitary Authorities, to all other Sanitary Authorities as herein defined, to all Officers of Customs, to all Medical Officers of Health of the Sanitary Authorities aforesaid, to all Masters of Ships, and to all others whom it may concern," the following instructions are extracted :—

- (d) The expression "cattle" includes a bull, cow, ox, heifer, calf, ram, ewe, wether, goat, and kid ;
- (e) The expression "pig" includes a boar, sow, and hog ;
- (f) The expression "meat" means pork, the flesh of cattle, any other edible part of a pig or of cattle, or a substance, compound, material, or article of which pork, or the flesh of cattle, or any other edible part of a pig or of cattle is an ingredient ;
- (g) The expression "foreign" used in relation to meat means brought from a place situate elsewhere than in the United Kingdom, the Channel Islands, or the Isle of Man ;
- (h) The expression "Official Certificate" used in relation to foreign meat or in relation to a box, case, receptacle, or package containing foreign meat, means a certificate, label, mark, stamp, or other voucher which, by a notice published in the London Gazette at any time during the period of twelve months beginning on the First day of October, One thousand nine hundred and eight, or which, on and after the expiration of that period, by any further Regulations under the Public Health (Regulations as to Food) Act, 1907, is declared to be admissible during the said period, or after the expiration of the said period, in the manner, to the extent, and subject to the rules and conditions prescribed in that notice, or in those Regulations, as evidence that the cattle or pig from which the meat is derived has been certified by a competent authority in the place of origin to be free from disease at the time of slaughter, and that the meat has been certified

by the like authority to have been dressed or prepared, and packed with the needful observance of all requirements for the prevention of danger arising to public health from the meat as an article of food ;

- (i) The expression " Foreign Meat of Class I." means foreign meat in the form

- (A) Of scrap meat, namely, meat which, whether it is fresh, or has, before importation, been subjected to a process of freezing or other refrigeration, or to chemical or other treatment, with or without the addition of any preservative or colouring substance—

(i) consists of scraps, trimmings or other pieces of such shape or in such condition as to afford insufficient means of identification with definite parts of a carcase ;

(ii) has not, before importation, been made ready for human consumption in the form of a sausage or of another prepared or manufactured article of food ; and

(iii) is without bone in its natural state of attachment ;

or

- (B) Of tripe, namely, any edible part of the stomach, or Of a tongue, or kidney,

to which formalin, or a solution, or other preparation of, or comprising formic aldehyde ; or a compound containing fluorine or boron ; or salicylic acid, formic acid, sulphurous acid, benzoic acid, or any compound of any such acid has been applied ;

or

- (c) Of severed parts of the carcase of a pig, or of other edible parts of a pig, which have not, before importation, been salted, cured, pickled, dried, or smoked, or otherwise prepared as bacon or ham, and which are not contained in a box, case, receptacle, or package with an Official Certificate impressed thereon, or affixed or attached thereto ;

- (j) The expression " Foreign Meat of Class II." means foreign meat which, being in the form of the entire carcase of a pig, has not, before importation, been salted, cured, pickled, dried, or smoked, or otherwise prepared as bacon or ham, and is without the head in its natural state of attachment to the carcase, and is without the lymphatic glands about the throat and any other part of the carcase in their natural position ;

- (k) The expression " Foreign Meat of Class III." means foreign meat which is in the form of severed parts of the carcase of a pig, or of other edible parts of a pig, which has not before importation been salted, cured, pickled, dried, or smoked, or otherwise prepared as bacon or ham, which is not and

does not comprise any foreign meat of Class I., and which is contained in a box, case, receptacle, or package with an official Certificate impressed thereon, or affixed or attached thereto ;

- (l) The expression " Foreign Meat Unclassed " means foreign meat other than foreign meat of Class I., foreign meat of Class II., or foreign meat of Class III. ;
- (m) The expression " importer " means any person in the United Kingdom who, either as owner or consignee, agent or broker, is entitled to the possession, custody, or control of any foreign meat ;
- (n) The expression " ship " includes a vessel or boat ;
- (o) The expression " Officer of Customs " includes any person acting under the authority of the Commissioners of His Majesty's Customs ;
- (p) The expression " Master " used in relation to a ship includes the officer, or other person for the time being in charge or command of the ship ;
- (q) The expression " Sanitary Authority " means every Port Sanitary Authority, and every Council of a Municipal Borough or other Urban District, and every Rural District Council whose borough or district includes or abuts on any part of a Customs port which part is not within the jurisdiction of a Port Sanitary Authority ;
- (r) The expression " the District " means the District of a Sanitary Authority ;
- (s) The expression " Medical Officer of Health " includes any duly qualified Medical Practitioner appointed or employed by a Sanitary Authority to act in the execution of these Regulations ; and any other person appointed or employed by the Sanitary Authority under these Regulations to exercise any powers, or to discharge any duties assigned to the Medical Officer of Health ;
- (t) The expression " Local Authority " means every Council of a Municipal Borough or other Urban District and every Rural District Council, not being a Sanitary Authority within the meaning of these Regulations, and includes the Common Council of the City of London and every Council of a Metropolitan Borough ;
- (u) The expression " area " used in relation to a Local Authority means the area subject to the jurisdiction of the Local Authority for the purposes of the Public Health Act, 1875, or of the Public Health (London) Act, 1891, as the case may be.

Article II.—These Regulations shall come into operation on the First day of January, One thousand nine hundred and nine, and shall then and thereafter apply and have effect in relation to the District of

every Sanitary Authority throughout England and Wales, and shall be enforced and executed by every Officer of Customs, by every Sanitary Authority, and by the Medical Officer of Health, and where the circumstances so require, by any other Officer of a Sanitary Authority.

Article III.—(1) The Officer of Customs, on the arrival of a ship within the District, shall ascertain whether the cargo of the ship comprises any foreign meat.

(2) Where the Officer of Customs finds, or has reason to believe, that the cargo comprises foreign meat having, according to the best opinion which, in the circumstances of the case, his knowledge enables him to form, the characteristics of Foreign Meat of Class I., or of Foreign Meat of Class II., the Officer of Customs by a notice in writing given to the Master or to the importer shall require that, until the meat has been examined by the Medical Officer of Health, it shall not be removed from the ship, or from the place of delivery or of landing, or from any other place which the Officer of Customs specifies in the notice.

The Officer of Customs shall at the same time inform the Medical Officer of Health to the effect of the notice.

(3) Where the Officer of Customs finds that the cargo comprises Foreign Meat of Class III., or Foreign Meat Unclassed, the Officer of Customs, unless, by reason of facts brought to his knowledge, or of representations made to him, he is of opinion that the meat requires examination by the Medical Officer of Health, may allow the meat to be removed from the ship, or from the place of delivery or of landing without any such examination.

Where the Officer of Customs is of opinion that the meat requires examination by the Medical Officer of Health, the Officer of Customs by a notice in writing shall require that, until the meat has been examined by the Medical Officer of Health, it shall not be removed from the ship, or from the place of delivery or of landing, or from any other place which the Officer of Customs specifies in the notice.

The Officer of Customs shall at the same time inform the Medical Officer of Health to the effect of the notice.

(4) Where any notice has been given in relation to any foreign meat by the Officer of Customs, in pursuance of subdivision (2) or of subdivision (3) of this Article, a person shall not, without the express permission of the Officer of Customs, remove the meat, at any time before its examination by the Medical Officer of Health, from the ship, or from the place of delivery or of landing, or from any other place specified in the notice.

(5) On being informed by the Officer of Customs to the effect of the notice given by him in pursuance of subdivision (2) or of subdivision (3) of this Article, the Medical Officer of Health shall forthwith proceed to examine the foreign meat to which the notice relates.

If, upon his examination of the meat, the Medical Officer of Health is of opinion that the meat may be removed to a place of destination in England or Wales for any purpose other than exportation, he shall give a certificate in writing to that effect.

If, upon his examination of the meat, the Medical Officer of Health is of opinion that the meat should not be removed to a place of destination in England or Wales for any purpose other than exportation, he shall by a notice in writing forbid the removal of the meat for any purpose other than exportation.

(6) Every notice given by the Officer of Customs, and every certificate and every notice given by the Medical Officer of Health in pursuance of this Article shall set forth the description of the foreign meat to which the notice or certificate relates, and such other details as will suffice to identify the particular consignment.

The Medical Officer of Health shall give every such certificate in duplicate, and every such notice in triplicate.

The Medical Officer of Health shall give one copy of the certificate to the Officer of Customs, and one copy to the importer.

The Medical Officer of Health shall give one copy of the notice to the Officer of Customs, one copy to the importer, and one copy to the Sanitary Authority.

Article IV.—(1) Where the Medical Officer of Health has ascertained that any foreign meat which the Officer of Customs has allowed to be removed is still within the District, the Medical Officer of Health may proceed forthwith to examine the meat.

If, upon his examination of the meat, the Medical Officer of Health is of opinion that the meat should not be removed to a place of destination in England or Wales for any purpose other than exportation, he shall by a notice in writing forbid the removal of the meat for any purpose other than exportation.

(2) Every notice given by the Medical Officer of Health in pursuance of this Article shall set forth the description of the foreign meat to which the notice relates, and such other details as will suffice to identify the particular consignment.

The Medical Officer of Health shall give every such notice in duplicate.

The Medical Officer of Health shall give one copy of the notice to the importer, and one copy to the Sanitary Authority.

Article V.—The Medical Officer of Health, in determining whether, in the case of any foreign meat to which these Regulations apply, he shall give a certificate or a notice in pursuance of these Regulations, shall observe and comply with the following rules, that is to say :—

He shall not give a certificate and shall give a notice as regards Foreign

Meat of Class I. and Foreign Meat of Class II. :

He shall not give a certificate and shall give a notice as regards Foreign Meat of Class III., or Foreign Meat Unclassed, if, in his opinion, the meat, notwithstanding the official certificate, is diseased, unsound, unwholesome, or unfit for human consumption.

Article VI.—The Sanitary Authority, within twelve hours after the receipt of a copy of a notice by the Medical Officer of Health, in pursuance of subdivision (5) of Article III., or of subdivision (1) of Article IV., with respect to any foreign meat, shall give to the importer notice in writing

which, in addition to such other particulars (if any) as the Sanitary Authority deem necessary or expedient, shall state that, unless, within twelve hours after the receipt of the notice, the importer gives to the Sanitary Authority a written undertaking to the effect that, subject to compliance in all respects with the requirements of any Regulations made under the Public Health (Regulations as to Food) Act, 1907, and in force for the time being, he will export the meat at his own expense, or, in proceedings before a Justice in pursuance of those Regulations, he will prove that the meat is not intended for sale for human consumption, the Sanitary Authority will cause the meat to be destroyed under the supervision of the Medical Officer of Health.

Article VII.—(1) Where, in pursuance of Article VI., a notice has been given by the Sanitary Authority with respect to any foreign meat, and no such written undertaking as is described in the notice has been received by the Sanitary Authority within the time specified in the notice, the Sanitary Authority shall forthwith cause the meat to which the notice relates to be destroyed, under the supervision of the Medical Officer of Health.

(2) Where, in pursuance of Article VI., a notice has been given by the Sanitary Authority with respect to any foreign meat, and within the time specified in the notice the Sanitary Authority have received such a written undertaking as is described in the notice to the effect that the importer will at his own expense export the meat, and within three days after the receipt by the Sanitary Authority of the undertaking the importer fails to export the meat, the Sanitary Authority shall cause the meat to be destroyed under the supervision of the Medical Officer of Health.

Article VIII.—(1) Where, in pursuance of Article VI., a notice has been given by the Sanitary Authority with respect to any foreign meat, and within the time specified in the notice, the Sanitary Authority have received such a written undertaking as is described in the notice to the effect that, subject to compliance in all respects with any Regulations made under the Public Health (Regulations as to Food) Act, 1907, and in force for the time being, the importer, in proceedings before a Justice, in pursuance of those Regulations, will prove that the meat is not intended for sale for human consumption, the Sanitary Authority shall within twenty-four hours after the receipt of the written undertaking take such steps as are prescribed or authorised by this Article to obtain the decision of a Justice with respect to the subject-matter of the undertaking of the importer or to any subject-matter of this Article.

(2) For the purposes of this Article, an application may be made by the Sanitary Authority to any Justice having jurisdiction in the District, and thereupon subsection (2) of Section 28 of the Public Health Acts Amendment Act, 1890, whether that subsection is or is not in force in the District, and any provision in any Act of Parliament which applies to a proceeding under or consequent upon that subsection, shall have effect in relation to the proceedings, as if the application were

a complaint within the meaning of the said subsection, and otherwise subject to such modifications and adaptations as are necessary to give effect to the following provisions, that is to say :—

- (i) An order made by a Justice under the said subsection, as applied by this subdivision, shall direct any foreign meat to be destroyed by the Sanitary Authority under the supervision of the Medical Officer of Health, if the Justice is satisfied that, in pursuance of any Regulations made under the Public Health (Regulations as to Food) Act, 1907, and in force for the time being, the removal of the meat to a place of destination in England or Wales for any purpose other than exportation has been forbidden, and that, on the evidence adduced before him, there is an absence of proof that the meat is not intended for sale for human consumption.

Where the Justice is satisfied, on the evidence adduced before him, that it has been proved that the meat is not intended for sale for human consumption, he shall make an order of dismissal of the application. By that order the Justice shall direct that the prohibition of the removal of the meat in pursuance of any such Regulation as aforesaid shall cease to have effect.

- (ii) The Justice shall further set forth in the order the description of and such other details as will suffice to identify the particular consignment of meat; together with the name, description, and abode of the importer, and the name, description and abode of the person to whom the consignment of meat is to be delivered; and shall forthwith furnish the Sanitary Authority with a copy of the order.

Article IX.—Where a notice forbidding the removal of any foreign meat has been given by the Medical Officer of Health in pursuance of subdivision (5) of Article III., or of subdivision (1) of Article IV., and a Justice has not, in pursuance of subdivision (2) of Article VIII., directed that the prohibition of the removal of the meat shall cease to have effect, a person shall not at any time remove the meat to a place of destination in England or Wales for any purpose other than exportation.

Article X.—Where the Sanitary Authority in pursuance of these Regulations cause any foreign meat to be destroyed, the Sanitary Authority before the destruction of the meat shall cause the description of, and such other details as will suffice to identify the particular consignment to be duly recorded, shall give to the importer a notice in writing of the destruction of the meat, including the contents of the record, and shall keep the record in their custody for a period of not less than twelve months.

Article XI.—A certificate or notice which, in pursuance of these Regulations, the Medical Officer of Health is empowered or required, or the Sanitary Authority are required to give may be given by properly addressing, prepaying and posting a letter containing the certificate or notice.

Article XII.—The Medical Officer of Health may, for any purpose of these Regulations, take a sample of foreign meat on board a ship, or delivered overside or landed within the District, and shall dispose of the sample in such manner as the Sanitary Authority direct.

Article XIII.—A Master of a ship or another person shall not knowingly land or put on shore within the District of a Sanitary Authority, any foreign meat which, in compliance with a requisition of a Sanitary Authority in pursuance of these Regulations, the importer has caused to be exported.

Article XIV.—A person, in relation to anything within his knowledge, shall answer truly all such questions put to him by, and give all such information to the Officer of Customs or the Medical Officer of Health as are necessary for any purpose of these Regulations; and a person in relation to anything within his knowledge, and material to any purpose of proceedings in pursuance of these Regulations, shall make a true statement, and truly answer any question when required or put by a Justice or other competent authority in the course and for any purpose of those proceedings.

Article XV.—(1) The Sanitary Authority may, with Our consent, appoint and pay a legally qualified Medical Practitioner to act in the execution of these Regulations, either in the place of, or as an Assistant to the Medical Officer of Health.

(2) The Sanitary Authority may also, with Our consent, appoint, employ and pay a person to act, under the direction of the Medical Officer of Health, in the exercise of any such powers or in the discharge of any such duties of the Medical Officer of Health under these Regulations as the Sanitary Authority assign to the person so appointed.

Article XVI.—A Sanitary Authority and a Local Authority, or two or more Sanitary Authorities or Local Authorities, shall act together for the purposes of these Regulations in every case in which We, by Order, require any such joint action.

In every such case, these Regulations shall, in relation to each Sanitary Authority, to each District of a Sanitary Authority, to each Local Authority, and to each area of a Local Authority to whom and to which the Order applies, have effect subject to such adaptations and modifications as are made by the Order.

Article XVII.—(1) If a difference arises in relation to any subject-matter of, or to anything done under these Regulations, the difference may, on the application of all the parties affected, be referred to Us for determination.

(2) It shall be at Our option to determine any such difference as arbitrators or otherwise; and if We elect to determine the difference as arbitrators, the provisions of the Regulation of Railways Act, 1868, respecting arbitrations by the Board of Trade, and the enactments amending those provisions shall apply as if they were re-enacted in these Regulations, and in terms made applicable to Us, and to the determination of the difference.

(3) Where We elect to determine any such difference otherwise than as arbitrators, We may by Our Order determine the difference, and Our determination shall be final and conclusive.

(4) Every Order made by Us in pursuance of this Article shall have effect as if the Order were enacted in these Regulations.

Article XVIII.—These Regulations may be cited as “The Public Health (Foreign Meat) Regulations, 1908”

UNSOUND FOOD REGULATIONS

(First Series)

In Regulations of the same date as the preceding, and addressed to the same parties, are embraced the following instructions :—

Article IV.—(1) The Medical Officer of Health may examine an article of food which has been landed within the District.

Where the circumstances, in his opinion, so require, the Medical Officer of Health may examine the article of food while it is on board a ship within the District, or after it has been delivered overside, and before it has been landed.

(2) The Master of a ship, or a person having the custody of any lands or premises within the District shall, at the request of the Medical Officer of Health, afford him access to the ship, or to the lands or premises, at any reasonable time, for the examination of an article of food which is on board the ship, or which has been deposited on the lands or premises.

(3) The importer, the Master of the ship, or a person having the custody of any lands or premises shall, at the request of the Medical Officer of Health, afford, by the convenient and suitable arrangement, unpacking, or uncovering of so much of the cargo, or of any consignment delivered overside or landed, or deposited on the lands or premises, as comprises articles of food, all such facilities as the Medical Officer of Health may reasonably require for the examination of the article of food.

(4) If, on his examination, the Medical Officer of Health is of opinion that the article of food is unsound or unwholesome, or unfit for human consumption, he may himself, or by an assistant, seize and carry away the article of food, or he may by a notice in writing to the importer, or to the Master of the ship, or to any other person having charge of the article of food, require that, until the article of food has been examined by a Justice, the article of food shall not, without the permission of the Medical Officer of Health, be removed from the place at which the Medical Officer of Health has examined it, or from any other place which he specifies in the notice.

(5) Except where the Medical Officer of Health, at the request or with the consent of the importer, allows an article of food, in relation to which a notice has been given in pursuance of subdivision (4) of this Article, to be removed for immediate destruction under the supervision of the Medical Officer of Health, or for the application and completion, under the like supervision, of any such process as the Medical Officer of

Health approves, and as will effectually prevent the use of the article of food for human consumption, the importer, the Master of the ship, or another person shall not, without the permission of the Medical Officer of Health, remove the article of food from the place at which the Medical Officer of Health has examined it, or from any other place specified in the notice, until the article of food has been examined by a Justice.

Article V.—On the complaint of the Medical Officer of Health that an article of food seized and carried away in pursuance of subdivision (4) of Article IV., or that an article of food in relation to which a notice has been given in pursuance of that subdivision, is unsound or unwholesome, or unfit for human consumption, a Justice, if satisfied, on his examination of the article of food, and on the evidence adduced before him, that the article of food is unsound or unwholesome, or unfit for human consumption, and that there is an absence of proof that the article of food is not intended for sale for human consumption, shall condemn the article of food and order it to be destroyed or disposed of under the supervision of the Medical Officer of Health by such means and in such a manner as to prevent its being used for human consumption.

Where, on any such complaint, a Justice, on his examination of the article of food, and on the evidence adduced before him, is satisfied that the article of food is unsound or unwholesome or unfit for human consumption, but that it has been proved that the article of food is not intended for sale for human consumption, the Justice shall make an order of dismissal of the complaint, and shall, in that order, set forth the description of, and such other details as will suffice to identify the article of food; together with the name, description and abode of the importer, and the name, description, and abode of the person to whom the article of food is to be delivered; and shall forthwith furnish the Sanitary Authority with a copy of the order.

Article VI.—(1) Where the Medical Officer of Health has reason to believe that an article of food which has been landed within the District, and has not been examined by the Medical Officer of Health, is deposited on any lands or premises within the District, and access to the lands or premises at a reasonable time, for the examination of the article of food by the Medical Officer of Health, has been refused by the person having the custody of the lands or premises, the Medical Officer of Health may make complaint to a Justice.

The Justice may thereupon by a warrant authorise the Medical Officer of Health to enter the lands or premises, and to search for, seize, and carry away the article of food by an assistant or otherwise.

(2) The person having the custody of the lands or premises named in the warrant shall, at any reasonable time, afford all such facilities as the Medical Officer of Health may reasonably require to enable him, by an assistant or otherwise, to search for, seize, and carry away the article of food.

(3) If, as the result of a search on the authority of a warrant granted in pursuance of subdivision (1) of this Article, the Medical Officer of

Health finds and examines the article of food, and, on his examination, is of opinion that the article of food is unsound or unwholesome, or unfit for human consumption, he may himself or by an assistant seize and carry away the article of food, or he may, by a notice in writing to the importer, or to the person having the custody of the lands or premises, require that, until the article of food has been examined by a Justice, the article of food shall not, without the permission of the Medical Officer of Health, be removed from the place at which the Medical Officer of Health has examined it, or from any other place which he specifies in the notice.

(4) Except where the Medical Officer of Health, at the request, or with the consent of the importer, allows an article of food in relation to which a notice has been given in pursuance of subdivision (3) of this Article, to be removed for immediate destruction under the supervision of the Medical Officer of Health, or for the application and completion, under the like supervision, of any such process as the Medical Officer of Health approves, and as will effectually prevent the use of the article of food for human consumption, the importer or another person shall not, without the permission of the Medical Officer of Health, remove the article of food from the place at which the Medical Officer of Health has examined it, or from any other place specified in the notice, until the article of food has been examined by a Justice.

(5) On production of the warrant granted in pursuance of subdivision (1) of this Article, and on the complaint of the Medical Officer of Health that an article of food which has been seized and carried away in pursuance of the warrant, or in relation to which a notice has been given in pursuance of subdivision (3) of this Article is unsound or unwholesome, or unfit for human consumption, a Justice, if satisfied on his examination of the article of food and on the evidence adduced before him that the article of food is unsound or unwholesome, or unfit for human consumption, and that there is an absence of proof that the article of food is not intended for sale for human consumption, shall condemn the article of food, and order it to be destroyed or disposed of under the supervision of the Medical Officer of Health by such means and in such a manner as to prevent its being used for human consumption.

Where, on any such complaint, a Justice, on his examination of the article of food, and on the evidence adduced before him, is satisfied that the article of food is unsound or unwholesome or unfit for human consumption, but that it has been proved that the article of food is not intended for sale for human consumption, the Justice shall make an order of dismissal of the complaint, and shall, in that order, set forth the description of, and such other details as will suffice to identify the article of food; together with the name, description, and abode of the importer, and the name, description, and abode of the person to whom the article of food is to be delivered; and shall forthwith furnish the Sanitary Authority with a copy of the order.

PART III

Article VII.—Where, in pursuance of these Regulations, an article of food is destroyed or otherwise disposed of under the supervision of the Medical Officer of Health, the Sanitary Authority before the destruction or other disposal of the article of food shall cause the description of, and such other details as will suffice to identify the article of food to be duly recorded, and shall keep the record in their custody for a period of not less than twelve months.

Article VIII.—(1) The Medical Officer of Health may take a sample from a consignment of articles of food for any purpose of these Regulations, and, subject to subdivision (2) of this Article, shall dispose of the sample in such manner as the Sanitary Authority direct.

(2) Where the Medical Officer of Health who takes a sample from a consignment of articles of food is of opinion that special procedure is necessary for the examination of the articles of food, or where, at the request of the importer, the Medical Officer of Health who takes any such sample has recourse to special procedure for the examination of the articles of food, the importer or another person who has the custody or control of the consignment shall, as regards the convenient and suitable arrangement and the place of deposit of the articles of food comprised in the consignment, afford during such time not exceeding forty-eight hours as the Medical Officer of Health by notice in writing appoints, or during any longer time which the Medical Officer of Health by notice in writing appoints, and to which the importer consents, all such facilities as the Medical Officer of Health may reasonably require for the completion of his examination of the articles of food.

Article IX.—A notice which, in pursuance of these Regulations, the Medical Officer of Health is empowered to give may be given by properly addressing, prepaying, and posting a letter containing the notice.

Article X.—A person, in relation to anything within his knowledge, shall answer truly all such questions put to him by, and give all such information to the Medical Officer of Health as are necessary for any purpose of these Regulations ; and a person, in relation to anything within his knowledge and material to any purpose of proceedings in pursuance of these Regulations, shall make a true statement, and truly answer any question, when required or put by a Justice or other competent authority in the course and for any purpose of those proceedings.

Article XI.—(1) The Sanitary Authority may, with Our consent, appoint and pay a legally qualified Medical Practitioner to act in the execution of these Regulations, either in the place of, or as an Assistant to the Medical Officer of Health.

(2) The Sanitary Authority may also, with Our consent, appoint or employ and pay a person to act, under the direction of the Medical Officer of Health, in the exercise of any such powers or in the discharge of any such duties of the Medical Officer of Health under these Regulations as the Sanitary Authority assign to the person so appointed.

Article XII.—A Sanitary Authority and a Local Authority, or two or more Sanitary Authorities or Local Authorities, shall act together for the purposes of these Regulations in every case in which We, by Order, require any such joint action.

In every such case these Regulations shall, in relation to each Sanitary Authority, to each District of a Sanitary Authority, to each Local Authority, and to each area of a Local Authority to whom and to which the Order applies, have effect subject to such adaptations and modifications as are made by the Order.

Article XIII.—(1) If a difference arises in relation to any subject-matter of, or to anything done under these Regulations, the difference may, on the application of all the parties affected, be referred to Us for determination.

(2) It shall be at Our option to determine any such difference as arbitrators or otherwise ; and, if We elect to determine the difference as arbitrators, the provisions of the Regulation of Railways Act, 1868, respecting arbitrations by the Board of Trade, and the enactments amending those provisions shall apply, as if they were re-enacted in these Regulations, and in terms made applicable to Us, and to the determination of the difference.

(3) Where We elect to determine any such difference otherwise than as arbitrators, We may by Our Order determine the difference, and Our determination shall be final and conclusive.

(4) Every Order made by Us in pursuance of this Article shall have effect as if the Order were enacted in these Regulations.

Article XIV.—(1) All powers given by these Regulations shall be deemed to be in addition to, and not in derogation of any other powers conferred by Regulations under the Public Health (Regulations as to Food) Act, 1907 ; and those other powers may be exercised in the same manner as if these Regulations had not been made.

(2) Where the duties of an Officer of Customs with respect to the examination of a cargo or consignment comprising an article of food have not been wholly discharged, an examination of the article of food for the purposes of these Regulations shall not be made without the consent of the Officer of Customs ; but every Officer of Customs shall afford such facilities as the circumstances require for the examination of the article of food in pursuance of these Regulations.

Article XV.—These Regulations may be cited as “ The Public Health (First Series : Unsound Food) Regulations, 1908.”

FOREIGN MEAT REGULATIONS

(AMENDMENT, 1909)

The following Regulations were issued on September 27, 1909 :—

NOW, THEREFORE, We, the Local Government Board, by this Our Order, and in the exercise of the powers conferred upon Us by the Public Health Act, 1875, the Public Health (London) Act, 1891, the Public

Health Act, 1896, and the Public Health (Regulations as to Food) Act, 1907, and of every other power enabling Us in that behalf, do make the following Regulations, that is to say :—

Article I.—Article I. of the Public Health (Foreign Meat) Regulations, 1908, shall be revoked : and those Regulations shall be altered so that they shall have effect, with the substitution for the Article so revoked of the following Article, namely :—

“ Article I.—In these Regulations, unless the contrary intention appears—

- “ (a) Words importing the masculine gender include females ;
- “ (b) Words in the singular include the plural, and words in the plural include the singular ;
- “ (c) Expressions referring to writing include references to printing and other modes of representing or reproducing words in a visible form ;
- “ (d) The expression ‘ cattle ’ includes a bull, cow, ox, heifer, calf, ram, ewe, wether, goat, and kid ;
- “ (e) The expression ‘ pig ’ includes a boar, sow, and hog ;
- “ (f) The expression ‘ meat ’ means pork, the flesh of cattle, any other edible part of a pig or of cattle, or a substance, compound, material, or article of which pork, or the flesh of cattle, or any other edible part of a pig or of cattle is an ingredient ;
- “ (g) The expression ‘ foreign ’ used in relation to meat means brought from a place situate elsewhere than in the United Kingdom, the Channel Islands, or the Isle of Man ;
- “ (h) The expression ‘ Official Certificate ’ used in relation to foreign meat or in relation to a box, case, receptacle, or package containing foreign meat, means a certificate, label, mark, stamp, or other voucher which, by a notice published in the London Gazette at any time during the period of twelve months beginning on the First day of October, One thousand nine hundred and eight, or which, by a notice published in the London Gazette after the expiration of that period, is declared to be admissible in the manner, to the extent, and subject to the rules and conditions prescribed in that notice, as evidence that the cattle or pig from which the meat is derived has been certified by a competent authority in the place of origin to be free from disease at the time of slaughter, and that the meat has been certified by the like authority to have been dressed or prepared, and packed with the needful observance of all requirements for the prevention of danger arising to public health from the meat as an article of food ; and, for the purposes of this definition and of any Regulations under the Public Health (Regulations as to Food) Act, 1907, every Official Certificate which, by a notice

- “ published in the London Gazette at any time during the
 “ period of twelve months beginning on the First day of
 “ October, One thousand nine hundred and eight, is declared
 “ to be admissible as aforesaid, shall, notwithstanding any-
 “ thing prescribed in the notice, continue to be so admissible
 “ until, by a further notice to be published in the London
 “ Gazette, the said Official Certificate is declared to be no
 “ longer so admissible ;
- “(i) The expression ‘ Foreign Meat of Class I.’ means foreign meat
 “ in the form
- “(A) Of scrap meat, namely, meat which, whether it is fresh,
 “ or has, before importation, been subjected to a process
 “ of freezing or other refrigeration, or to chemical or other
 “ treatment, with or without the addition of any preser-
 “ vative or colouring substance—
 “ (i) consists of scraps, trimmings or other pieces
 “ (whether with or without bone in its natural state of
 “ attachment) of such shape or in such condition as to
 “ afford insufficient means of identification with definite
 “ parts of a carcase ; and
 “ (ii) has not, before importation, been made ready
 “ for human consumption in the form of a sausage, or of
 “ another prepared or manufactured article of food ;
 “ or
- “(B) Of tripe, namely, any edible part of the stomach, or
 “ Of a tongue, or kidney,
 “ to which formalin, or a solution, or other preparation of,
 “ or comprising formic aldehyde ; or a compound con-
 “ taining fluorine or boron ; or salicylic acid, formic acid,
 “ sulphurous acid, benzoic acid, or any compound of any
 “ such acid has been applied ;
 “ or
- “(c) Of severed parts of the carcase of a pig, or of other edible
 “ parts of a pig, which have not, before importation, been
 “ salted, cured, pickled, dried, or smoked, or otherwise
 “ prepared in the manner in which bacon or ham is ordi-
 “ narily prepared, and which are not contained in a box,
 “ case, receptacle, or package with an Official Certificate
 “ impressed thereon, or affixed or attached thereto ;
 “ or
- “(D) Of severed parts of the carcase of a pig, or of other edible
 “ parts of a pig, which have, before importation, been
 “ salted, cured, pickled, dried, or smoked, or otherwise
 “ prepared in the manner in which bacon or ham is ordi-
 “ narily prepared, and which are not contained in a box,
 “ case, receptacle, or package with an Official Certificate
 “ impressed thereon, or affixed or attached thereto, and

“ which, in the case of the severed parts of the carcase,
 “ are without the lymphatic glands about those parts in
 “ their natural position ;

“ or

- “ (E) Of meat which, whether derived from cattle or a pig, is
 “ in the form of a carcase, or of a part of a carcase, and,
 “ in either case, comprises the ribs, and is without any such
 “ membrane as, in its natural position, forms the lining
 “ of the cavity enclosed by the ribs ;
- “ (j) The expression ‘ Foreign Meat of Class II.’ means foreign meat
 “ which, being in the form of the entire carcase of a pig, is
 “ without the head in its natural state of attachment to the
 “ carcase, or is without the lymphatic glands about the
 “ throat, or about any other part of the carcase, in their
 “ natural position ;
- “ (k) The expression ‘ Foreign Meat of Class III.’ means foreign
 “ meat which is in the form of severed parts of the carcase
 “ of a pig, or of other edible parts of a pig, which is not and
 “ does not comprise any foreign meat of Class I., or any
 “ foreign meat of Class II., and which is contained in a box,
 “ case, receptacle, or package with an Official Certificate
 “ impressed thereon, or affixed or attached thereto ;
- “ (l) The expression ‘ Foreign Meat Unclassed ’ means foreign
 “ meat other than foreign meat of Class I., foreign meat
 “ of Class II., or foreign meat of Class III. ;
- “ (m) The expression ‘ importer ’ means any person in the United
 “ Kingdom who, either as owner or consignee, agent or
 “ broker, is entitled to the possession, custody, or control of
 “ any foreign meat ;
- “ (n) The expression ‘ ship ’ includes a vessel or boat ;
- “ (o) The expression ‘ Officer of Customs and Excise ’ includes any
 “ person acting under the authority of the Commissioners
 “ of Customs and Excise ;
- “ (p) The expression ‘ Master ’ used in relation to a ship includes
 “ the officer or other person for the time being in charge or
 “ command of the ship ;
- “ (q) The expression ‘ Sanitary Authority ’ means every Port Sani-
 “ tary Authority, and every Council of a Municipal Borough
 “ or other Urban District, and every Rural District Council
 “ whose borough or district includes or abuts on any part of a
 “ Customs port which part is not within the jurisdiction of a
 “ Port Sanitary Authority ;
- “ (r) The expression ‘ the District ’ means the District of a Sanitary
 “ Authority ;
- “ (s) The expression ‘ Medical Officer of Health ’ includes any duly
 “ qualified Medical Practitioner appointed or employed by
 “ a Sanitary Authority to act in the execution of these

“ Regulations ; and any other person appointed or employed
 “ by the Sanitary Authority under these Regulations to
 “ exercise any powers, or to discharge any duties assigned to
 “ the Medical Officer of Health ;

“ (l) The expression ‘ Local Authority ’ means every Council of a
 “ Municipal Borough or other Urban District and every
 “ Rural District Council, not being a Sanitary Authority
 “ within the meaning of these Regulations, and includes the
 “ Common Council of the City of London and every Council
 “ of a Metropolitan Borough ;

“ (u) The expression ‘ area ’ used in relation to a Local Authority
 “ means the area subject to the jurisdiction of the Local
 “ Authority for the purposes of the Public Health Act, 1875,
 “ or of the Public Health (London) Act, 1891, as the case
 “ may be.”

Article II.—These Regulations shall come into operation on the Thirtieth day of September, One thousand nine hundred and nine, and then and thereafter the Public Health (Foreign Meat) Regulations, 1908, and any Order theretofore made in pursuance of Article XVI. of those Regulations shall apply and have effect and shall be enforced and executed in such form and in such manner as will give full effect to the alterations made by these Regulations, and as if, throughout the Public Health (Foreign Meat) Regulations, 1908, references to an Officer of Customs and Excise were substituted for references to an Officer of Customs, and as if, throughout any such Order, references to the Public Health (Foreign Meat) Regulations, 1908, as altered by these Regulations, were substituted for references to the Public Health (Foreign Meat) Regulations, 1908, and references to an Officer of Customs and Excise were substituted for references to an Officer of Customs.

Article III.—These Regulations may be cited as “ The Public Health (Foreign Meat) Amending Regulations, 1909.”

Notice. The Public Health Act, 1896, provides by subsection 3 of Section 1 that if any person wilfully neglects or refuses to obey or carry out, or obstructs the execution of any regulation made under any of the enactments mentioned in that Act he shall be liable to a penalty not exceeding One Hundred Pounds, and in the case of a continuing offence to a further penalty not exceeding Fifty Pounds for every day during which the offence continues.

The power of making regulations under the Public Health Act, 1896, and the enactments mentioned in that Act is enlarged by the Public Health (Regulations as to Food) Act, 1907.

FOREIGN MEAT REGULATION

(AMENDMENT, 1909)

On September 29, 1909, the Local Government Board for Scotland issued the following "To all Local Authorities in Scotland, to all Officers of Customs and Excise, to all Medical Officers of Health, to all Masters of Ships, and to all others whom it may concern":—

WHEREAS, in relation to articles of food, the Public Health (Foreign Meat) Regulations (Scotland), 1908, provide for the use of an Official Certificate, for the Classification of Foreign Meat, and for the combined action of Authorities for the purposes of those Regulations;

And whereas it is expedient that, with respect to the aforesaid matters and to other purposes, the Public Health (Foreign Meat) Regulations (Scotland), 1908, be altered, and that, accordingly, such Regulations as are hereinafter set forth be made;

And whereas the Commissioners of His Majesty's Customs and Excise have signified their consent to the said Regulations, so far as they apply to the Officers of Customs and Excise:

NOW, THEREFORE, We, the Local Government Board for Scotland, by this Our Order, and in the exercise of the powers conferred upon Us by the Public Health (Scotland) Act, 1897, and the Public Health (Regulations as to Food) Act, 1907, and of every other power enabling Us in that behalf, do make the following Regulations, that is to say:

Article I.—Article I. of the Public Health (Foreign Meat) Regulations (Scotland), 1908, shall be revoked: and those Regulations shall be altered so that they shall have effect, with the substitution for the Article so revoked of the following Article, namely:—

"Article I.—In these Regulations, unless the contrary intention appears—

"(a) The expression 'cattle' includes a bull, cow, ox, heifer, calf, ram, ewe, wether, goat, and kid;

"(b) The expression 'pig' includes a boar, sow, and hog;

"(c) The expression 'meat' means pork, the flesh of cattle, any other edible part of a pig or of cattle, or a substance, compound, material, or article of which pork, or the flesh of cattle, or any other edible part of a pig or of cattle is an ingredient;

"(d) The expression 'foreign' used in relation to meat means brought from a place situate elsewhere than in the United Kingdom, the Channel Islands, or the Isle of Man;

"(e) The expression 'Official Certificate' used in relation to foreign meat or in relation to a box, case, receptacle, or package containing foreign meat, means a certificate, label, mark, stamp, or other voucher which, by a notice published in the Edinburgh Gazette at any time during the period of twelve months beginning on the First day of October, One

- “ thousand nine hundred and eight, or which, by a notice
 “ published in the Edinburgh Gazette after the expiration of
 “ that period, is declared to be admissible in the manner,
 “ to the extent, and subject to the rules and conditions
 “ prescribed in that notice, as evidence that the cattle or
 “ pig from which the meat is derived has been certified by
 “ a competent authority in the place of origin to be free
 “ from disease at the time of slaughter, and that the meat
 “ has been certified by the like authority to have been
 “ dressed or prepared, and packed with the needful obser-
 “ vance of all requirements for the prevention of danger
 “ arising to public health from the meat as an article of food ;
 “ and, for the purposes of this definition and of any Regula-
 “ tions under the Public Health (Regulations as to Food)
 “ Act, 1907, every Official Certificate which, by a notice
 “ published in the Edinburgh Gazette at any time during
 “ the period of twelve months beginning on the First day of
 “ October, One thousand nine hundred and eight, is declared
 “ to be admissible as aforesaid, shall, notwithstanding any-
 “ thing prescribed in the notice, continue to be so admissible
 “ until, by a further notice to be published in the Edinburgh
 “ Gazette, the said Official Certificate is declared to be no
 “ longer so admissible ;
- “ (f) The expression ‘ Foreign Meat of Class I.’ means foreign meat
 “ in the form
- “ (A) Of scrap meat, namely, meat which, whether it is fresh, or
 “ has, before importation, been subjected to a process of
 “ freezing or other refrigeration, or to chemical or other
 “ treatment, with or without the addition of any preser-
 “ vative or colouring substance—
 “ (i) consists of scraps, trimmings or other pieces
 “ (whether with or without bone in its natural state of
 “ attachment) of such shape or in such condition as to
 “ afford insufficient means of identification with definite
 “ parts of a carcase ; and
 “ (ii) has not, before importation, been made ready
 “ for human consumption in the form of a sausage, or of
 “ another prepared or manufactured article of food ;
 “ or
- “ (B) Of tripe, namely, any edible part of the stomach, or
 “ Of a tongue, or kidney,
 “ to which formalin, or a solution, or other preparation of,
 “ or comprising formic aldehyde ; or a compound contain-
 “ ing fluorine or boron ; or salicylic acid, formic acid,
 “ sulphurous acid, benzoic acid, or any compound of any
 “ such acid has been applied ;
 “ or

- “(c) Of severed parts of the carcase of a pig, or of other edible
 “ parts of a pig, which have not, before importation,
 “ been salted, cured, pickled, dried, or smoked, or other-
 “ wise prepared in the manner in which bacon or ham is
 “ ordinarily prepared, and which are not contained in a
 “ box, case, receptacle, or package with an Official Certi-
 “ ficate impressed thereon, or affixed or attached thereto ;
 “ or
- “(D) Of severed parts of the carcase of a pig, or of other edible
 “ parts of a pig, which have, before importation, been
 “ salted, cured, pickled, dried, or smoked, or otherwise
 “ prepared in the manner in which bacon or ham is ordi-
 “ narily prepared, and which are not contained in a box,
 “ case, receptacle, or package with an Official Certificate
 “ impressed thereon, or affixed or attached thereto, and
 “ which, in the case of the severed parts of the carcase,
 “ are without the lymphatic glands about those parts in
 “ their natural position ;
 “ or
- “(E) Of meat which, whether derived from cattle or a pig, is in
 “ the form of a carcase, or of a part of a carcase, and, in
 “ either case, comprises the ribs, and is without any such
 “ membrane as, in its natural position, forms the lining
 “ of the cavity enclosed by the ribs ;
- “(g) The expression ‘ Foreign Meat of Class II.’ means foreign meat
 “ which, being in the form of the entire carcase of a pig, is
 “ without the head in its natural state of attachment to the
 “ carcase, or is without the lymphatic glands about the
 “ throat, or about any other part of the carcase, in their
 “ natural position ;
- “(h) The expression ‘ Foreign Meat of Class III.’ means foreign
 “ meat which is in the form of severed parts of the carcase
 “ of a pig, or of other edible parts of a pig, which is not and
 “ does not comprise any foreign meat of Class I., or any
 “ foreign meat of Class II., and which is contained in a box,
 “ case, receptacle, or package with an Official Certificate
 “ impressed thereon, or affixed or attached thereto ;
- “(i) The expression ‘ Foreign Meat Unclassed ’ means foreign meat
 “ other than foreign meat of Class I., foreign meat of Class II.,
 “ or foreign meat of Class III. ;
- “(j) The expression ‘ importer ’ means any person in the United
 “ Kingdom who, either as owner or consignee, agent or broker,
 “ is entitled to the possession, custody, or control of any
 “ foreign meat ;
- “(k) The expression ‘ ship ’ includes any sailing or steam ship,
 “ vessel, or boat not belonging to His Majesty or any Foreign
 “ Government ;

- “(l) The expression ‘ Officer of Customs and Excise ’ includes any
“ person acting under the authority of the Commissioners of
“ Customs and Excise ;
- “(m) The expression ‘ Master ’ used in relation to a ship includes
“ the officer or other person for the time being in charge or
“ command of the ship ;
- “(n) The expression ‘ Local Authority ’ has the same meaning as
“ in the Public Health (Scotland) Act, 1897, and includes
“ any Port Local Authority or Joint Port Local Authority
“ constituted in terms of that Act ;
- “(o) The expression ‘ Medical Officer of Health ’ includes any duly
“ qualified Medical Practitioner appointed or employed by
“ a Local Authority to act in the execution of these Regu-
“ lations ; and any other person appointed or employed by
“ the Local Authority under these Regulations to exercise
“ any powers, or to discharge any duties assigned to the
“ Medical Officer of Health.”

Article II.—These Regulations shall come into operation on the Eighth day of October, One thousand nine hundred and nine, and then and thereafter the Public Health (Foreign Meat) Regulations (Scotland), 1908, and any Order theretofore made in pursuance of Article XVI. of those Regulations shall apply and have effect and shall be enforced and executed in such form and in such manner as will give full effect to the alterations made by these Regulations, and as if, throughout the Public Health (Foreign Meat) Regulations (Scotland), 1908, references to an Officer of Customs and Excise were substituted for references to an Officer of Customs, and as if, throughout any such Order, references to the Public Health (Foreign Meat) Regulations (Scotland), 1908, as altered by these Regulations, were substituted for references to the Public Health (Foreign Meat) Regulations (Scotland), 1908, and references to an Officer of Customs and Excise were substituted for references to an Officer of Customs.

Article III.—These Regulations may be cited as “ The Public Health (Foreign Meat) Amending Regulations (Scotland), 1909.”

NOTICE.—The Public Health (Scotland) Act, 1897, provides by Section 87 that if any person wilfully neglects or refuses to obey or carry out; or obstructs the execution of, any regulation made under Part IV. of the Act, he shall be liable to a penalty not exceeding *one hundred pounds*, and in the case of a continuing offence to a further penalty not exceeding *fifty pounds* for every day during which the offence continues : and any such penalty shall be recoverable with expenses at the instance of the Lord-Advocate on behalf of the Board, or by any Local Authority with the consent of the Board in any competent Court. The power of making regulations under Part IV. of the Public Health (Scotland) Act, 1897, is enlarged by the Public Health (Regulations as to Food) Act, 1907.

MEMORANDUM BY THE LOCAL GOVERNMENT BOARD RESPECTING THE
CONDITIONS TO BE OBSERVED IN CONNEXION WITH THE OFFICIAL
CERTIFICATION OF MEAT FOOD PRODUCTS INTENDED FOR EXPORT
TO THE UNITED STATES OF AMERICA AND THE PHILIPPINE ISLANDS

In view of the requirements of the Food Laws in operation in the United States of America and the Philippine Islands in regard to meat foods imported into those countries, the Local Government Board, at the request of the Foreign Office, have formulated the following conditions to be complied with by traders in England and Wales who prepare or pack meat foods for export to the United States of America and the Philippine Islands and who desire that such exportations should be accompanied by an official attestation of precautions taken to safeguard the wholesomeness of the foods in question.

(A)—*Requirements to be fulfilled by persons manufacturing or packing meat products*

Such persons should make application to the Board * for approval or designation of an officer to act as certifying officer for the purpose in question until the Board shall otherwise determine. Such application should state :—

1. Name and address of firm ; situation of trade premises concerned, and sanitary district in which these premises are comprised.
2. Nature of meat foods habitually exported or proposed to be exported.
3. How the firm is interested, *i.e.*, whether as manufacturers of the foods, or as packers for export to the United States and the Philippine Islands, or both, together with any details necessary to explain how the export to the United States and the Philippine Islands of the meat foods with which the firm is concerned takes place, and where the foods in question have been prepared.
4. Whether application has already been made to any, and if so what, Medical Officer of Health for a certificate regarding the premises in question ; whether any such certificate has been given or refused by him ; and whether any certificate regarding meat foods despatched to the United States or to the Philippine Islands has been given by any officer of the Local Authority or other person who is not the Medical Officer of Health of the district.
5. That the applicant undertakes that he will give all necessary facilities to the certifying officer or his representatives, or to any officer of the Board, in the matter of access, inspection, sampling, and like matters, and that he will not withhold any information which the certifying officer may require in

* Applications in respect of trade premises situated in Scotland or Ireland should be made to the Local Government Board of Scotland or Ireland, as the case may be.

connexion with the issue of certificates. This undertaking is required notwithstanding that the certifying officer, if he is Medical Officer of Health of the district, is already in the possession of statutory powers under the Public Health Act, 1875, or other Acts, in relation to inspection of premises and seizure of unsound food.

(B)—*Conditions to be observed by certifying officers*

The Medical Officer of Health of the district or other certifying officer designated by the Board is required to keep himself informed, by personal inquiry and in other available ways, as to :—

1. Structure and character of premises on which the meat foods are prepared, stored, or packed (as the case may be) in regard to opportunities of objectionable or unwholesome contamination of these foods, at any stage of their preparation, storage, or packing.
2. Cleanliness and wholesomeness of methods employed in preparing, storing, or packing the meat foods in question.
3. Precautions taken to avoid the utilisation for food purposes of diseased, unsound, or unwholesome meat in any portion of the premises ; and arrangements safely to dispose of any meat which, on account of disease, unsoundness, unwholesomeness, or for any other reason, is unfit for human food.
4. Steps taken to ensure that all meat foods prepared or packed for export to the United States and the Philippine Islands are solely the product of animals which, on adequate ante-mortem and post-mortem inspection, have been found free from disease and suitable for human food.

If the information obtained by the certifying officer in regard to (1), (2), (3) and (4) above is not in his view satisfactory, certification is to be withheld.

Information is forthwith to be given to the Board by the certifying officer in any instance where he has refused to grant a certificate.

The certifying officer will, as and when requested by the Board, give such information as may be required by them in regard to the methods of inquiry, inspection, and certification which have been adopted in regard to the premises in question.

(C)—*Forms*

Forms of declarations to be used by manufacturers and exporters, and forms of certificates to be given by the authorised certifying officers are appended. Additional forms of declaration and certificate can be obtained from Messrs. Wyman & Sons, Limited, 109, Fetter Lane, Fleet Street, London, E.C., either directly or through any bookseller.

(D)—*Discontinuance of Certification*

If the Board have reason to believe that improper use is being made at any time of any declaration, or of any certificate given by a certifying officer respecting any premises, the Board will cease to authorise the issue of official certificates in respect of such premises.

APPENDIX

FORMS OF DECLARATIONS TO BE USED BY MANUFACTURERS AND EXPORTERS, AND OF CERTIFICATES TO BE GIVEN BY THE AUTHORISED CERTIFYING OFFICERS, IN CONNEXION WITH THE EXPORT OF MEAT FOODS TO THE UNITED STATES OF AMERICA AND THE PHILIPPINE ISLANDS

(A) FORMS OF DECLARATION AND CERTIFICATE TO BE USED WHERE THE MEAT FOODS ARE PREPARED, STORED, AND PACKED ON, AND DISPATCHED FOR EXPORT FROM, ONE AND THE SAME PREMISES

(1) DECLARATION by manufacturer of meat foods in the *.....

I (or We).....hereby declare that the whole of the meat foods as follow : †

 packed in cases marked ‡.....
 and shipped per.....have been prepared, stored, and packed on, and dispatched from, the premises §

 (Signed).....
 Date.....

* State the name of the sanitary district, whether borough or urban district, or rural district.
 † Specify articles.
 ‡ Insert marks, &c.
 § Insert address.

(2) CERTIFICATE by designated by the Local Government Board as Certifying Officer in connexion with the export of meat foods to the United States of America and the Philippine Islands.

I hereby certify that the establishment §.....situated in the *....., and referred to in the foregoing declaration, has been and remains under the system of sanitary supervision prescribed by the Memorandum of the Local Government Board on United States and Philippine Islands Meat Food Certification.

(Signed).....
 Date.....

N.B.—The date in the certificate should in all cases be filled up by the Certifying Officer.

(B) FORMS OF DECLARATION AND CERTIFICATES TO BE USED
WHERE THE MEAT FOODS ARE STORED AND PACKED ON,
OR DISPATCHED FOR EXPORT FROM, PREMISES OTHER
THAN THOSE ON WHICH THEY ARE PREPARED

(1) CERTIFICATE by.....designated by
the Local Government Board as Certifying Officer in connexion
with the export of meat foods to the United States of America
and the Philippine Islands.

I hereby certify that the establishment *.....
situated in the †....., has been and
remains under the system of sanitary supervision prescribed
by the Memorandum of the Local Government Board on
United States and Philippine Islands Meat Food Certification.

* Insert
address of the
establish-
ment in
which the
meat foods
have been
prepared.

† State the
name of the
sanitary
district,
whether
borough or
urban
district, or
rural district.

‡ Insert
address of
premises on
or from
which the
goods have
been stored,
packed, or
dispatched
for export.

§ Specify
articles.

¶ Insert
marks, &c.

(Signed).....
Date.....

(2) DECLARATION by.....occupier of
the premises ‡.....in the †.....

I (or We).....hereby declare
that the §.....packed in cases
marked ¶.....and shipped per.....
have all been prepared in the establishment *.....
referred to in the foregoing Certificate (1), and that they have
been stored and packed on, and dispatched for export from,
the premises ‡.....

(Signed).....
Date.....

(3) CERTIFICATE by..... designated
by the Local Government Board as Certifying Officer in con-
nexion with the export of meat foods to the United States of
America and the Philippine Islands.

I hereby certify that the premises ‡.....
situated in the †....., and referred
to in the foregoing Declaration (2), have been and remain under
the system of sanitary supervision prescribed by the Memo-
randum of the Local Government Board on United States and
Philippine Islands Meat Food Certification.

(Signed).....
Date.....

N.B.—The date in the certificate should in all cases be
filled up by the Certifying Officer.

DECLARATION AND CERTIFICATES IN CONNEXION
WITH THE EXPORT OF MEAT FOODS TO THE
UNITED STATES OF AMERICA AND THE PHILIP-
PINE ISLANDS, AS PRESCRIBED BY THE LOCAL
GOVERNMENT BOARD MEMORANDUM, 1908

FORM A

THE FOLLOWING DECLARATION AND CERTIFICATE ARE TO BE
USED WHERE THE MEAT FOODS ARE PREPARED, STORED,
AND PACKED ON, AND DISPATCHED FOR EXPORT FROM,
ONE AND THE SAME PREMISES

(1) DECLARATION by
manufacturer of meat foods in the *.....

* State the
name of the
sanitary dis-
trict, whether
borough or
urban
district, or
rural district.

I (or We).....hereby declare that
the whole of the meat foods as follow †

† Specify
articles.

packed in cases marked ‡

‡ Insert
marks, &c.

and shipped per

have been prepared, stored, and packed on, and dispatched

from, the premises ||

|| Insert
address.

(Signed).....

Date.....

[SEE BACK]

(2) CERTIFICATE by
designated by the Local Government Board as Certifying Officer
in connexion with the export of meat foods to the United
States of America and the Philippine Islands.

I hereby certify that the establishment *

* Insert
address.

situated in the †.....

and referred to in the foregoing declaration, has been and
remains under the system of sanitary supervision prescribed
by the Memorandum of the Local Government Board on
United States and Philippine Islands Meat Food Certification.

† State the
name of the
sanitary dis-
trict, whether
borough or
urban
district, or
rural district.

(Signed).....

Date.....

N.B.—The date in the certificate should in all cases be filled
up by the Certifying Officer.

DECLARATION AND CERTIFICATES IN CONNEXION
WITH THE EXPORT OF MEAT FOODS TO THE
UNITED STATES OF AMERICA AND THE PHILIP-
PINE ISLANDS, AS PRESCRIBED BY THE LOCAL
GOVERNMENT BOARD MEMORANDUM, 1908

FORM B

THE FOLLOWING DECLARATION AND CERTIFICATES ARE TO BE
USED WHERE THE MEAT FOODS ARE STORED AND PACKED
ON, OR DISPATCHED FOR EXPORT FROM, PREMISES OTHER
THAN THOSE ON WHICH THEY ARE PREPARED.

(1) CERTIFICATE by, designated
by the Local Government Board as Certifying Officer in con-
nexion with the export of meat foods to the United States of
America and the Philippine Islands.

* Insert
address of
the establish-
ment in which
the meat
foods have
been pre-
pared.

† State the
name of the
sanitary dis-
trict, whether
borough or
urban
district, or
rural district.

I hereby certify that the establishment *.....
situated in the †.....
has been and remains under the system of sanitary supervision
prescribed by the Memorandum of the Local Government
Board on United States and Philippine Islands Meat Food
Certification.

(Signed).....

Date.....

[SEE BACK.]

* Insert
address of
premises on
or from
which the
goods have
been stored,
packed, or
dispatched
for export.

† State the
name of the
sanitary dis-
trict, whether
borough or
urban
district, or
rural district.

‡ Specify
articles.

§ Insert
address of the
establish-
ment in
which the
meat foods
have been
prepared.

|| Insert
marks, &c.

(2.) DECLARATION by.....
occupier of the premises *
in the †.....

I (or we).....
hereby declare that the ‡
packed in cases marked ||
and shipped per

have all been prepared in the establishment §
referred to in the foregoing Certificate (1), and that they have
been stored and packed on, and dispatched for export from,
the premises *

(Signed).....

Date.....

(3) CERTIFICATE by, designated by the Local Government Board as Certifying Officer in connexion with the export of meat foods to the United States of America and the Philippine Islands.

I hereby certify that the premises

situated in the
and referred to in the foregoing Declaration (2), have been and remain under the system of sanitary supervision prescribed by the Memorandum of the Local Government Board on United States and Philippine Islands Meat Food Certification.

(Signed)

Date

N.B.—The date in the certificate should in all cases be filled up by the Certifying Officer.

MEMORANDUM BY THE LOCAL GOVERNMENT BOARD RESPECTING THE
CONDITIONS TO BE OBSERVED IN CONNEXION WITH THE OFFICIAL
CERTIFICATION OF MEAT FOOD PRODUCTS INTENDED FOR EXPORT TO
ARGENTINA

In view of the Regulations issued on the 4th October, 1906, by the Argentine Government with regard to the sanitary inspection of meat foods, the Local Government Board, at the request of the Foreign Office, have formulated the following conditions to be complied with by traders in England and Wales who prepare or pack meat foods for export to Argentina and who desire that such exportations should be accompanied by an official attestation of precautions taken to safeguard the wholesomeness of the foods in question.

(A)—*Requirements to be fulfilled by persons manufacturing or packing meat products*

Such persons should make application to the Board for approval or designation of an officer to act as certifying officer for the purpose in question until the Board shall otherwise determine. Such application should state :—

1. Name and address of firm ; situation of trade premises concerned, and sanitary district in which these premises are comprised.
2. Nature of meat foods habitually exported or proposed to be exported.
3. How the firm is interested, *i.e.*, whether as manufacturers of the foods, or as packers for export to Argentina, or both, together with any details necessary to explain how the export to Argentina of the meat foods with which the firm is

concerned takes place, and where the foods in question have been prepared.

- [4. Whether application has already been made to any, and if so what, Medical Officer of Health for a certificate regarding the premises in question ; whether any such certificate has been given or refused by him ; and whether any certificate regarding meat foods despatched to Argentina has been given by any officer of the local authority or other person who is not the Medical Officer of Health of the district.
- .5 That the applicant undertakes that he will give all necessary facilities to the certifying officer or his representatives, or to any officer of the Board, in the matter of access, inspection, sampling, and like matters, and that he will not withhold any information which the certifying officer may require in connexion with the issue of certificates. This undertaking is required notwithstanding that the certifying officer, if he is Medical Officer of Health of the district, is already in the possession of statutory powers under the Public Health Act, 1875, or other Acts, in relation to inspection of premises and seizure of unsound food.

(B)—*Conditions to be observed by certifying officers*

The Medical Officer of Health of the district or other certifying officer designated by the Board is required to keep himself informed, by personal inquiry and in other available ways, as to :—

1. Structure and character of premises on which the meat foods are prepared, stored, or packed (as the case may be) in regard to opportunities of objectionable or unwholesome contamination of these foods, at any stage of their preparation, storage, or packing.
2. Cleanliness and wholesomeness of methods employed in preparing, storing, or packing the meat foods in question.
3. Precautions taken to avoid the utilisation for food purposes of diseased, unsound, or unwholesome meat in any portion of the premises ; and arrangements safely to dispose of any meat which, on account of disease, unsoundness, unwholesomeness, or for any other reason, is unfit for human food.

If the information obtained by the certifying officer in regard to (1), (2) and (3) above is not in his view satisfactory, certification is to be withheld.

Information is forthwith to be given to the Board by the certifying officer in any instance where he has refused to grant a certificate.

The certifying officer will, as and when requested by the Board, give such information as may be required by them in regard to the methods of inquiry, inspection, and certification which have been adopted in regard to the premises in question.

Forms of declarations to be used by manufacturers and exporters, and forms of certificates to be given by the authorised certifying officers are appended.

If the Board have reason to believe that improper use is being made at any time of any declaration, or of any certificate given by a certifying officer respecting any premises, the Board will cease to authorise the issue of official certificates in respect of such premises.

FORMS OF DECLARATIONS TO BE USED BY MANUFACTURERS AND EXPORTERS, AND OF CERTIFICATES TO BE GIVEN BY THE AUTHORISED CERTIFYING OFFICERS, IN CONNEXION WITH THE EXPORT OF MEAT FOODS TO ARGENTINA

N.B.—The date in the certificate should in all cases be filled up by the Certifying Officer.

DECLARATIONS AND CERTIFICATES IN CONNEXION
WITH THE EXPORT OF MEAT FOODS TO ARGENTINA,
AS PRESCRIBED BY THE LOCAL GOVERNMENT BOARD MEMORANDUM, 1907

FORM A

THE FOLLOWING DECLARATION AND CERTIFICATE ARE TO BE
USED WHERE THE MEAT FOODS ARE PREPARED, STORED,
AND PACKED ON, AND DISPATCHED FOR EXPORT FROM, ONE
AND THE SAME PREMISES.

(1) DECLARATION by

manufacturer of meat foods in the *.....

* State the name of the sanitary district, whether borough or urban district, or rural district.

I (or We)..... hereby declare that the whole of the meat foods as follow : †

† Specify articles.

packed in cases marked ‡.....

‡ Insert marks, &c.

and shipped per

have been prepared, stored, and packed on, and dispatched

from, the premises ||

|| Insert address.

(Signed).....

Date.....

[SEE BACK.]

(2) CERTIFICATE by

designated by the Local Government Board as Certifying Officer in connexion with the export of meat foods to Argentina.

I hereby certify that the establishment *.....

* Insert address.

situated in the †.....

† State the name of the sanitary district, whether borough or urban district, or rural district.

and referred to in the foregoing declaration, has been and remains under the system of sanitary supervision prescribed by the Memorandum of the Local Government Board on Argentine Meat Food Certification.

(Signed).....

Date.....

N.B.—The date in the certificate should in all cases be filled up by the Certifying Officer.

DECLARATIONS AND CERTIFICATES IN CONNEXION
WITH THE EXPORT OF MEAT FOODS TO ARGEN-
TINA, AS PRESCRIBED BY THE LOCAL GOVERN-
MENT BOARD MEMORANDUM, 1907

FORM B

THE FOLLOWING DECLARATION AND CERTIFICATES ARE TO BE
USED WHERE THE MEAT FOODS ARE STORED AND PACKED
ON, OR DISPATCHED FOR EXPORT FROM, PREMISES OTHER
THAN THOSE ON WHICH THEY ARE PREPARED

(1) CERTIFICATE by....., designated
by the Local Government Board as Certifying Officer in con-
nexion with the export of meat foods to Argentina.

* Insert
address of the
establishment
on which the
meat foods
have been
prepared.

† State the
name of the
sanitary dis-
trict, whether
borough or
urban
district, or
rural district.

I hereby certify that the establishment *.....

.....
situated in the †.....
has been and remains under the system of sanitary supervision
prescribed by the Memorandum of the Local Government
Board on Argentine Meat Food Certification.

(Signed).....
Date.....
[SEE BACK.]

(2) DECLARATION by

* Insert
address of the
premises on
or from
which the
goods have
been stored,
packed, or
dispatched
for export.

† State the
name of the
sanitary dis-
trict, whether
borough or
urban
district, or
rural district.

‡ Specify
articles.

§ Insert
marks, &c.

§ Insert
address of the
establishment
in which the
meat foods
have been
prepared.

occupier of the premises *

in the †

I (or we)

hereby declare that the ‡

packed in cases marked ||

and shipped per

have all been prepared in the establishment §

referred to in the foregoing Certificate (1), and that they have

been stored and packed on, and dispatched for export from,

the premises *

(Signed).....
Date.....

(3) CERTIFICATE by, designated by the Local Government Board as Certifying Officer in connexion with the export of meat foods to Argentina.

I hereby certify that the premises situated in the and referred to in the foregoing Declaration (2), have been and remain under the system of sanitary supervision prescribed by the Memorandum of the Local Government Board on Argentine Meat Food Certification.

(Signed).....

Date.....

N.B.—The date in the certificate should in all cases be filled up by the Certifying Officer.

MEAT MARKING BILL [H.L.]

A BILL

INTITULED

An Act for the purpose of marking all Imported Meat and for the Registration of Dealers in such Meat.

BE it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows :—

1. This Act may be cited as the Meat Marking Act, 1909.
2. This Act shall come into operation on the *first day of January one thousand nine hundred and ten*.
3. In this Act the word “meat” means and includes the flesh of any animal commonly used for human food.

The word “animal” has the same meaning as defined by the Diseases of Animals Act, 1894, section fifty-nine :

The words “foreign meat” and “colonial meat” mean and include all meat the flesh of cattle, sheep, or pigs of any kind or age which shall be imported either alive or dead into any part of Great Britain or Ireland from any country or place beyond the limits of Great Britain and Ireland :

The words “British or Irish meat” mean meat grown, fattened, and killed within the United Kingdom of Great Britain and Ireland, the Channel Islands, or the Isle of Man :

The expression “local authority” has the following meanings (that is to say) :—

- (a) As regards the City of London and the liberties thereof, the Commissioners of Sewers ;

(b) As regards the rest of the County of London, the London County Council ;

(c) As regards all other parts of England, the same meaning as in the Public Health Act ;

(d) As regards Scotland, a district committee appointed under the County Council (Scotland) Act, 1889, for the purposes of the administration of the laws relating to public health ;

(e) As regards Ireland, the same meaning as in the Public Health (Ireland) Act, 1878.

The word "person" includes a body corporate or unincorporate :

The word "importer" shall include any person who, whether as owner, consignor, or consignee, agent, or broker, is in possession of, or in anywise entitled to, the custody or control of the meat.

4.—(1) All meat imported dead shall be marked in the country of origin with the word "foreign" or "colonial" in printed capital letters in such manner as to be clearly visible to the Commissioners of Customs when the meat is unshipped in the United Kingdom. In the case of carcases imported in wrappers each wrapper must also be marked in a similar manner. Every carcase shall be so marked that when cut up in the ordinary way each separate joint shall bear these words or part of these words. It shall be the duty of the Commissioners of Customs to see that all imported dead meat is so marked before it leaves the wharf.

(2) If in any case the Commissioners of Customs are of opinion that an offence against this section has been committed, they shall communicate to the Board of Agriculture the name of the importer and such other facts that they may possess. The Board of Agriculture is hereby empowered to confiscate all carcases not properly marked as aforesaid, and to hand them over (if of good quality) to the Metropolitan Asylums Board, or to order them to be destroyed. For every such offence the importer shall be deemed to be guilty of an offence under this Act in addition to losing his property.

(3) In the case of animals imported alive for slaughter, it shall be the duty of the Commissioners of Customs to see that every carcase is marked as aforesaid before it is removed from the abattoirs adjoining the place of debarkation.

5. Every person who, either by himself or herself, or by his or her agent, servant, or other person employed for that purpose, sells or exposes for sale, or who hawks or offers for sale any foreign or colonial meat which does not bear such mark, shall cause to be attached to each carcase or piece of such foreign or colonial meat a label or mark containing in printed capital letters the words "foreign" or "colonial" in such manner as to be clearly visible to the purchaser, and any persons not complying with this requisition shall be guilty of an offence under this Act.

6. Every person dealing in, selling, offering, or exposing or keeping for sale, or having in his possession for the purpose of sale, foreign or

colonial meat, shall at all times keep painted, affixed, or placed in a conspicuous position, and so as to be easily legible whether by night or day, upon or to some part of the shop, stall, vehicle, or place where or from which such foreign or colonial meat is dealt in, sold, offered, or exposed, or kept for sale, the following words, which shall be legibly printed or painted in capital letters not less than two inches square, viz., “Dealer in foreign and (or) colonial meat,” and every person so dealing, selling, offering, or exposing or keeping for sale, or having in his possession for the purpose of sale, foreign or colonial meat without having such words painted, affixed, or placed in manner aforesaid upon or to such shop, stall, vehicle, or place as aforesaid, shall be guilty of an offence under this Act.

7. Every person who shall deal in, sell, offer, expose, or keep for sale, or have in his possession for the purpose of sale, any foreign or colonial meat as or for British or Irish meat, shall be guilty of an offence under this Act.

8. It shall not be lawful for any person to keep for sale, or to have in his possession for the purpose of sale, or to sell or to offer or expose for sale, or to deal in foreign or colonial meat, unless he is registered as a “dealer in foreign and colonial meat” in accordance with this Act.

9. Every local authority shall keep a register of persons keeping for sale or having in their possession for the purpose of sale or selling or offering or exposing for sale or dealing in foreign or colonial meat within its district, and shall cause to be entered in such register the name, address, and place or places of business of every such dealer; and shall from time to time revise and correct such register; and the local authority shall register every such person as aforesaid in such register free of charge, and every such person not so registered shall be guilty of an offence under this Act.

10. The local authority shall from time to time give public notice by advertisement in one or more newspaper or newspapers circulating in its district, and, if it thinks fit, by placards, handbills, or otherwise, of registration under this Act being required, and of the mode and time and place of such registration.

11. Such register shall be kept at the office of the local authority and shall be open to inspection by any person free of charge during the time when such office is usually open for business purposes.

12.—(1) It shall be the duty of every local authority to take care that the provisions of this Act are duly carried out within the district of such authority, and every such authority shall have power to appoint for such purposes, and to remunerate inspectors and other officers having competent technical knowledge, such inspectors and other officers shall have powers within the district of the local authority by which they shall have been appointed, to enter and inspect any shop, stall, vehicle, or place where or from which any meat is sold, or offered, or exposed, or kept for sale, and shall have access to all invoices, books, or papers relating to the purchase or sale of meat, and without going through the

form of purchase to take samples of any such meat in order to ascertain whether such meat is or is not foreign or colonial meat.

(2) If the Board of Agriculture, after communication with a local authority, are of opinion that the local authority have failed to execute or enforce any of the provisions of this Act, and that their failure affects the general interest of the consumer or the general interest of agriculture in the United Kingdom, as the case may be, the Board may, by order, empower an officer of the Board to execute and enforce these provisions or to procure the execution and enforcement thereof.

(3) The expenses incurred by the Board or their officer under any such order shall be treated as expenses incurred by the local authority in the execution of the said Act, and shall be paid by the local authority to the Board on demand, and in default the Board may recover the amount of the expenses with costs from the local authority.

(4) For the purposes of this section an order of the Board shall be conclusive in respect of any default, amount of expenses, or other matter therein stated or appearing.

13. If any such inspector or other officer shall be of opinion that any person has been guilty of an offence under this Act, he shall forthwith report the name and address of such person, and the offence of which in the opinion of such inspector or other officer he has been guilty, to the local authority by which such inspector or other officer shall have been appointed, and if upon consideration of such report it shall appear to the local authority that the offence thereby alleged has been committed, the local authority shall prosecute the person alleged to have been guilty for such offence :

Provided always, that nothing herein contained shall prevent any private person from instituting a prosecution for an offence under this Act.

14. All prosecutions under this Act shall be conducted in a summary manner before any justices in petty sessions assembled having jurisdiction in the place where the alleged offence was committed, and no prosecution for an offence under this Act shall be instituted after the expiration of *three calendar months* next after the day on which the alleged offence was committed.

15. Every person found guilty of an offence under this Act shall be liable for a first offence to a fine not exceeding *ten pounds* and for a second or any subsequent offence to a fine not exceeding *twenty-five pounds* ; or, if the offence in the opinion of the court was committed by the personal act, default, or culpable negligence of the person accused, that person shall be liable (at the option of the court) to imprisonment with or without hard labour for a period not exceeding six months.

16. The expenses of carrying this Act into execution in the City of London and the liberties thereof shall be borne by the consolidated rate raised by the Commissioners of Sewers of the said city, and in the remainder of the County of London by the consolidated rate raised by the London County Council, and in all other parts of England such expenses

shall be included in the general expenses of the sanitary authority under the Public Health Act, 1875.

17. The expenses of carrying this Act into execution in Scotland shall be included in the rate imposed by a county council to meet any deficiency in respect of expenditure under the Public Health (Scotland) Acts, and in Ireland such expenses shall be included in the general expenses of a sanitary authority under the Public Health (Ireland) Act, 1878.

CHAPTER XIII PRICES OF BEST BEEF

APPENDIX OF WHOLESALE PRICES OF BEST BEEF AT WOODSIDE (BIRKENHEAD) LAIRAGES FOR THE YEARS 1898 to 1902 (WEEKS ENDING FRIDAYS)

1898											
Jan.	7.	$4\frac{5}{8}$	per lb.	May	6.	4	per lb.	Sept.	2.	$4\frac{3}{4}$	per lb.
„	14.	$4\frac{5}{8}$	„	„	13.	$4\frac{7}{8}$	„	„	9.	$4\frac{7}{8}$	„
„	21.	$4\frac{3}{4}$	„	„	20.	$4\frac{7}{8}$	„	„	16.	$4\frac{3}{4}$	„
„	28.	$4\frac{3}{4}$	„	„	27.	$4\frac{3}{4}$	„	„	23.	$4\frac{7}{8}$	„
Feb.	4.	$4\frac{7}{8}$	„	June	3.	$4\frac{5}{8}$	„	„	30.	$5\frac{1}{16}$	„
„	11.	$4\frac{3}{4}$	„	„	10.	$4\frac{3}{4}$	„	Oct.	7.	$4\frac{7}{8}$	„
„	18.	$4\frac{3}{4}$	„	„	17.	$4\frac{11}{16}$	„	„	14.	$4\frac{3}{4}$	„
„	25.	$4\frac{5}{8}$	„	„	24.	$4\frac{3}{4}$	„	„	21.	$4\frac{3}{4}$	„
Mar.	4.	$4\frac{5}{8}$	„	July	1.	$4\frac{3}{4}$	„	„	28.	$4\frac{3}{4}$	„
„	11.	$4\frac{5}{8}$	„	„	8.	5	„	Nov.	4.	$4\frac{3}{4}$	„
„	18.	$4\frac{5}{8}$	„	„	15.	$5\frac{1}{8}$	„	„	11.	$4\frac{3}{4}$	„
„	25.	$4\frac{9}{16}$	„	„	22.	5	„	„	18.	$4\frac{7}{8}$	„
April	1.	$4\frac{11}{16}$	„	„	29.	$4\frac{3}{4}$	„	„	25.	5	„
„	8.	$4\frac{11}{16}$	„	Aug	5.	$4\frac{11}{16}$	„	Dec.	2.	$5\frac{1}{4}$	„
„	15.	$4\frac{9}{16}$	„	„	12.	$4\frac{3}{8}$	„	„	9.	$4\frac{3}{4}$	„
„	22.	$4\frac{5}{8}$	„	„	19.	$4\frac{9}{16}$	„	„	16.	$4\frac{3}{4}$	„
„	29.	5	„	„	26.	$4\frac{5}{8}$	„	„	23.	5	„
								„	30.	$4\frac{3}{4}$	„

1899											
Jan.	6.	5	„	Mar.	24.	$5\frac{3}{4}$	„	June	9.	5	„
„	13.	$5\frac{1}{8}$	„	„	31.	$5\frac{1}{2}$	„	„	16.	$5\frac{1}{8}$	„
„	20.	$5\frac{5}{16}$	„	April	7.	$5\frac{1}{8}$	„	„	23.	$5\frac{1}{8}$	„
„	27.	$5\frac{1}{2}$	„	„	14.	$5\frac{1}{8}$	„	„	30.	$5\frac{1}{4}$	„
Feb.	3.	$5\frac{1}{2}$	„	„	21.	$5\frac{1}{2}$	„	July	7.	$5\frac{1}{4}$	„
„	10.	$5\frac{1}{4}$	„	„	28.	$5\frac{5}{16}$	„	„	14.	$5\frac{1}{8}$	„
„	17.	$5\frac{1}{8}$	„	May	5.	$5\frac{1}{8}$	„	„	21.	5	„
„	24.	$5\frac{1}{2}$	„	„	12.	$5\frac{1}{16}$	„	„	28.	$4\frac{7}{8}$	„
Mar.	3.	$5\frac{1}{2}$	„	„	19.	5	„	Aug.	4.	$4\frac{7}{8}$	„
„	10.	$5\frac{1}{4}$	„	„	26.	$5\frac{1}{8}$	„	„	11.	$4\frac{15}{16}$	„
„	17.	$5\frac{1}{8}$	„	June	2.	$5\frac{3}{8}$	„	„	18.	$5\frac{1}{4}$	„

1690

PRICES OF BEST BEEF

1691

1899

Aug. 25.	$5\frac{5}{10}$	per lb.	Oct. 13.	$5\frac{1}{4}$	per lb.	Nov. 24.	$5\frac{7}{8}$	per lb.
Sept. 1.	$5\frac{1}{8}$	"	" 20.	$5\frac{1}{4}$	"	Dec. 1.	$5\frac{3}{8}$	"
" 8.	$5\frac{1}{8}$	"	" 27.	$5\frac{1}{4}$	"	" 8.	$5\frac{1}{4}$	"
" 15.	$5\frac{1}{8}$	"	Nov. 3.	$5\frac{1}{10}$	"	" 15.	$5\frac{1}{4}$	"
" 22.	$5\frac{1}{8}$	"	" 10.	$5\frac{1}{8}$	"	" 22.	$5\frac{1}{2}$	"
" 29.	$5\frac{1}{4}$	"	" 17.	$5\frac{3}{8}$	"	" 29.	$5\frac{1}{2}$	"
Oct. 6.	$5\frac{1}{4}$	"						

1900

Jan. 5.	6	"	May 4.	$5\frac{1}{2}$	"	Sept. 7.	$5\frac{3}{4}$	"
" 12.	6	"	" 11.	$5\frac{3}{4}$	"	" 14.	$5\frac{5}{8}$	"
" 19.	$5\frac{3}{8}$	"	" 18.	$5\frac{7}{8}$	"	" 21.	5	"
" 26.	$5\frac{1}{4}$	"	" 25.	$5\frac{1}{10}$	"	" 28.	5	"
Feb. 2.	$5\frac{3}{4}$	"	June 1.	6	"	Oct. 5.	$5\frac{3}{8}$	"
" 9.	$5\frac{3}{4}$	"	" 8.	$6\frac{1}{2}$	"	" 12.	$5\frac{3}{8}$	"
" 16.	$5\frac{5}{8}$	"	" 15.	$5\frac{7}{8}$	"	" 19.	$5\frac{3}{8}$	"
" 23.	$5\frac{1}{2}$	"	" 22.	$5\frac{1}{2}$	"	" 26.	$5\frac{1}{2}$	"
Mar. 2.	$5\frac{1}{8}$	"	" 29.	$5\frac{3}{8}$	"	Nov. 2.	$5\frac{3}{8}$	"
" 9.	$5\frac{1}{4}$	"	July 6.	$5\frac{3}{8}$	"	" 9.	5	"
" 16.	$5\frac{3}{8}$	"	" 13.	$5\frac{3}{8}$	"	" 16.	$5\frac{3}{8}$	"
" 23.	$5\frac{1}{4}$	"	" 20.	$5\frac{3}{8}$	"	" 23.	$5\frac{3}{8}$	"
" 30.	$5\frac{3}{8}$	"	" 27.	$5\frac{3}{4}$	"	" 30.	5	"
April 6.	$5\frac{1}{2}$	"	Aug. 3.	$5\frac{3}{4}$	"	Dec. 7.	5	"
" 13.	$5\frac{1}{4}$	"	" 10.	$5\frac{1}{2}$	"	" 14.	$5\frac{1}{4}$	"
" 20.	$5\frac{1}{4}$	"	" 17.	$5\frac{5}{10}$	"	" 21.	$5\frac{1}{4}$	"
" 27.	$5\frac{5}{10}$	"	" 24.	$5\frac{1}{8}$	"	" 28.	$5\frac{3}{8}$	"
			" 31.	$5\frac{3}{4}$	"			

1901

Jan. 4.	$5\frac{3}{8}$	"	May 3.	$5\frac{1}{8}$	"	Sept. 6.	$5\frac{3}{4}$	"
" 11.	$5\frac{1}{2}$	"	" 10.	$5\frac{5}{10}$	"	" 13.	$5\frac{1}{2}$	"
" 18.	$5\frac{7}{10}$	"	" 17.	$5\frac{5}{8}$	"	" 20.	$5\frac{3}{8}$	"
" 25.	$5\frac{3}{10}$	"	" 24.	$5\frac{3}{10}$	"	" 27.	$5\frac{1}{8}$	"
Feb. 1.	$5\frac{5}{10}$	"	" 31.	$5\frac{3}{10}$	"	Oct. 4.	$5\frac{1}{2}$	"
" 8.	$5\frac{3}{8}$	"	June 7.	$5\frac{3}{10}$	"	" 11.	$5\frac{7}{10}$	"
" 15.	$5\frac{7}{8}$	"	" 14.	$5\frac{3}{8}$	"	" 18.	$5\frac{5}{10}$	"
" 22.	$5\frac{3}{8}$	"	" 21.	$5\frac{3}{8}$	"	" 25.	5	"
Mar. 1.	$5\frac{1}{4}$	"	" 28.	$5\frac{3}{8}$	"	Nov. 1.	$5\frac{1}{8}$	"
" 8.	5	"	July 5.	$5\frac{3}{10}$	"	" 8.	$5\frac{3}{10}$	"
" 15.	5	"	" 12.	$5\frac{1}{4}$	"	" 15.	$5\frac{3}{8}$	"
" 22.	$5\frac{3}{8}$	"	" 19.	$5\frac{3}{8}$	"	" 22.	$5\frac{3}{8}$	"
" 29.	$5\frac{5}{8}$	"	" 26.	$5\frac{1}{2}$	"	" 29.	$5\frac{1}{4}$	"
April 5.	$5\frac{9}{10}$	"	Aug. 2.	$5\frac{1}{2}$	"	Dec. 6.	$5\frac{1}{8}$	"
" 12.	$5\frac{3}{8}$	"	" 9.	$5\frac{5}{10}$	"	" 13.	$5\frac{1}{4}$	"
" 19.	$5\frac{1}{2}$	"	" 16.	$5\frac{5}{10}$	"	" 20.	$5\frac{1}{2}$	"
" 26.	$5\frac{1}{2}$	"	" 23.	$5\frac{5}{10}$	"	" 27.	$5\frac{3}{4}$	"
			" 30.	$5\frac{1}{2}$	"			

1902

Jan.	3.	$5\frac{1}{2}$	per lb.	May	2.	$6\frac{1}{8}$	per lb.	Sept.	5.	$5\frac{3}{8}$	per lb.
,,	10.	$5\frac{1}{2}$	,,	,,	9.	$6\frac{5}{8}$	,,	,,	12.	6	,,
,,	17.	$5\frac{3}{8}$	,,	,,	16.	$6\frac{3}{8}$	,,	,,	19.	$6\frac{3}{8}$	,,
,,	24.	$5\frac{3}{8}$	,,	,,	23.	$6\frac{1}{4}$	,,	,,	26.	$6\frac{3}{8}$	,,
,,	31.	$5\frac{5}{8}$	,,	,,	30.	$6\frac{1}{4}$	,,	Oct.	3.	$5\frac{7}{8}$	,,
Feb.	7.	$5\frac{7}{8}$	,,	June	6.	$6\frac{5}{8}$	,,	,,	10.	$5\frac{1}{2}$	,,
,,	14.	$5\frac{3}{10}$	,,	,,	13.	$6\frac{7}{8}$	,,	,,	17.	$5\frac{3}{8}$	,,
,,	21.	$5\frac{9}{10}$	,,	,,	20.	$6\frac{3}{4}$	,,	,,	24.	$5\frac{1}{2}$	,,
,,	28.	$5\frac{1}{4}$	,,	,,	27.	$6\frac{1}{4}$	,,	,,	31.	$5\frac{3}{8}$	,,
Mar.	7.	$5\frac{7}{10}$	,,	July	4.	$6\frac{3}{8}$	,,	Nov.	7.	$5\frac{1}{2}$	,,
,,	14.	$5\frac{1}{2}$	,,	,,	11.	$6\frac{3}{8}$	,,	,,	14.	$5\frac{1}{2}$	,,
,,	21.	$5\frac{1}{2}$	,,	,,	18.	$6\frac{3}{4}$	,,	,,	21.	$5\frac{3}{8}$	,,
,,	28.	$5\frac{3}{8}$	,,	,,	25.	$6\frac{7}{8}$	,,	,,	28.	$5\frac{1}{10}$	,,
April	4.	6	,,	Aug.	1.	$6\frac{3}{8}$	,,	Dec.	5.	$5\frac{3}{8}$	,,
,,	11.	$6\frac{1}{4}$	,,	,,	8.	$6\frac{1}{8}$	,,	,,	12.	$5\frac{5}{8}$	,,
,,	18.	$6\frac{3}{10}$	,,	,,	15.	$6\frac{1}{4}$	,,	,,	19.	$5\frac{3}{4}$	,,
,,	25.	6	,,	,,	22.	$5\frac{3}{4}$	,,	,,	26.	6	,,
				,,	29.	$5\frac{3}{4}$	,,				

PRICES OF BEEF AT BIRKENHEAD

(Killed at Birkenhead Port)

1903

Jan.	2.	$5\frac{1}{2}$	per lb.	May	1.	$5\frac{1}{2}$	per lb.	Sept.	4.	$5\frac{1}{4}$	per lb.
,,	9.	$5\frac{3}{4}$	,,	,,	8.	$5\frac{1}{4}$	,,	,,	11.	$5\frac{1}{8}$	,,
,,	16.	6	,,	,,	15.	$5\frac{3}{8}$	,,	,,	18.	$5\frac{1}{2}$	,,
,,	23.	$5\frac{7}{8}$	,,	,,	22.	$5\frac{3}{8}$	,,	,,	25.	$5\frac{1}{4}$	,,
,,	30.	$5\frac{3}{8}$	,,	,,	29.	$5\frac{1}{4}$	,,	Oct.	2.	5	,,
Feb.	6.	$5\frac{3}{8}$	,,	June	5.	$5\frac{1}{8}$	,,	,,	9.	$4\frac{1}{10}$	,,
,,	13.	$5\frac{3}{8}$	,,	,,	12.	5	,,	,,	16.	$4\frac{7}{8}$	,,
,,	20.	$5\frac{1}{2}$	,,	,,	19.	$4\frac{7}{8}$	,,	,,	23.	$5\frac{1}{8}$	,,
,,	27.	$5\frac{1}{2}$	,,	,,	26.	$5\frac{3}{10}$	,,	,,	30.	$5\frac{1}{8}$	,,
Mar.	6.	$5\frac{1}{2}$	,,	July	3.	$5\frac{3}{10}$	,,	Nov.	6.	$4\frac{3}{4}$	,,
,,	13.	$5\frac{9}{10}$	,,	,,	10.	$5\frac{1}{4}$	,,	,,	13.	$4\frac{1}{2}$	,,
,,	20.	$5\frac{9}{10}$	,,	,,	17.	$5\frac{1}{4}$	,,	,,	20.	$4\frac{1}{2}$	,,
,,	27.	$5\frac{5}{8}$	,,	,,	24.	$5\frac{3}{10}$	,,	,,	27.	5	,,
April	3.	$5\frac{5}{8}$	,,	,,	31.	$5\frac{3}{10}$	,,	Dec.	4.	$4\frac{7}{8}$	,,
,,	10.	$5\frac{7}{10}$	,,	,,	7.	$5\frac{3}{10}$	,,	,,	11.	$4\frac{3}{4}$	,,
,,	17.	$5\frac{3}{8}$	,,	,,	14.	$5\frac{1}{4}$	,,	,,	18.	$4\frac{7}{8}$	,,
,,	24.	$5\frac{7}{10}$	,,	,,	21.	$5\frac{1}{8}$	,,	,,	25.	$5\frac{1}{4}$	,,
				,,	28.	$5\frac{3}{8}$	,,				

PRICES OF BEST BEEF

1693

PRICES OF BEEF AT BIRKENHEAD

(Per cwt.)

UNITED STATES AND CANADIAN

(Killed at Birkenhead Port)

1904

		1st	2nd			1st	2nd			1st	2nd
Jan.	1.	44/4	—	May	7.	47/10	44/4	Sept.	3.	49/-	40/10
„	8.	45/6	—	„	14.	51/4	44/4	„	10.	51/4	42/-
„	15.	45/6	—	„	21.	51/4	46/8	„	17.	46/8	37/4
„	22.	45/6	—	„	28.	52/6	45/6	„	24.	46/8	37/4
„	29.	45/6	—	June	4.	52/6	46/8	Oct.	1.	47/10	39/8
Feb.	5.	43/2	—	„	11.	51/4	46/8	„	8.	49/-	40/10
„	12.	43/2	—	„	18.	50/2	46/8	„	15.	47/10	40/10
„	19.	44/4	—	„	25.	50/2	44/4	„	22.	50/2	42/-
„	26.	46/1	—	July	2.	50/2	44/4	„	29.	49/-	42/-
Mar.	5.	46/8	—	„	9.	50/2	44/4	Nov.	5.	47/10	42/-
„	12.	45/6	—	„	16.	53/8	46/8	„	12.	47/10	42/-
„	19.	46/1	—	„	23.	57/2	53/8	„	19.	45/6	35/-
„	26.	44/4	—	„	30.	52/6	45/6	„	26.	45/6	35/-
April	2.	42/7	—	Aug.	6.	53/8	46/8	Dec.	3.	45/6	36/2
„	9.	43/2	—	„	13.	53/8	46/8	„	10.	50/2	37/4
„	16.	47/10	44/4	„	20.	52/6	46/8	„	17.	52/6	37/4
„	23.	50/2	46/8	„	27.	51/4	46/8	„	24.	52/6	37/4
„	30.	49/-	44/4					„	31.	52/6	37/4

1905

Jan.	7.	51/4	42/-	May	6.	51/4	46/8	Sept.	7.	49/-	44/4
„	14.	51/4	—	„	13.	49/-	46/8	„	14.	46/8	42/-
„	21.	51/4	44/4	„	20.	49/-	46/8	„	21.	49/-	44/4
„	28.	50/2	42/-	„	27.	51/4	46/8	„	28.	46/8	39/8
Feb.	4.	50/2	42/-	June	1.	51/4	46/8	Oct.	5.	44/4	39/8
„	11.	49/-	42/-	„	8.	51/4	46/8	„	12.	46/8	39/8
„	18.	46/8	42/-	„	15.	51/4	46/8	„	19.	44/4	37/4
„	25.	46/8	42/-	„	22.	40/-	46/8	„	26.	44/4	37/4
Mar.	4.	46/8	39/8	„	29.	49/-	46/8	Nov.	2.	39/8	32/8
„	11.	46/8	39/8	July	6.	49/-	46/8	„	9.	42/-	35/-
„	18.	47/10	39/8	„	13.	51/4	46/8	„	16.	42/-	37/4
„	25.	46/8	39/8	„	20.	49/-	44/4	„	23.	42/-	37/4
April	1.	46/8	39/8	„	27.	46/8	44/4	„	30.	44/4	39/8
„	8.	47/10	42/-	Aug.	3.	46/8	44/4	Dec.	7.	44/4	39/8
„	15.	49/-	42/-	„	10.	46/8	42/-	„	14.	46/8	42/-
„	22.	49/-	46/8	„	17.	46/8	42/-	„	21.	46/8	42/-
„	29.	51/4	46/8	„	24.	49/-	44/4	„	28.	49/-	46/8
				„	31.	46/8	42/-				

1906

		1st	2nd			1st	2nd			1st	2nd
Jan.	4.	46/8	42/-	May	17.	46/8	42/-	Sept.	6.	46/8	44/4
"	11.	46/8	42/-	"	24.	46/8	44/4	"	13.	46/8	42/-
Feb.	1.	46/8	42/-	"	31.	49/-	46/8	"	20.	44/4	37/4
"	8.	46/8	44/4	June	7.	49/-	46/8	"	27.	46/8	42/-
"	15.	49/-	46/8	"	14.	46/8	44/4	Oct.	4.	46/8	39/8
"	22.	46/8	44/4	"	21.	46/8	44/4	"	11.	44/4	39/8
Mar.	1.	46/8	44/4	"	28.	46/8	42/-	"	18.	44/4	39/6
"	8.	46/8	44/4	July	5.	46/8	42/-	"	25.	46/8	44/4
"	15.	46/8	44/4	"	12.	44/4	42/-	Nov.	1.	51/4	44/4
"	22.	46/8	44/4	"	19.	49/-	44/4	"	8.	51/4	44/4
"	29.	46/8	42/-	"	26.	51/4	46/	"	15.	49/-	44/4
April	5.	46/8	44/4	"	26.	51/4	46/8	"	22.	49/-	46/8
"	11.	46/8	44/4	Aug.	2.	49/-	44/4	"	29.	46/8	42/-
"	19.	46/8	44/4	"	15.	49/-	44/4	Dec.	6.	46/8	42/-
"	26.	51/4	46/8	"	23.	49/-	44/4	"	13.	49/-	44/4
May	3.	49/-	44/4	"	30.	46/8	44/4	"	20.	49/-	44/4
"	10.	46/8	44/4					"	27.	49/-	44/4

1907

Jan.	3.	49/-	44/4	May	2.	49/-	44/4	Sept.	5.	51/4	46/8
"	10.	46/8	42/-	"	9.	51/4	46/8	"	12.	51/4	49/-
"	17.	51/4	44/4	"	16.	51/4	46/8	"	19.	49/-	46/8
"	24.	49/-	44/4	"	23.	51/4	49/-	"	26.	49/-	44/4
"	31.	51/4	49/-	"	30.	51/4	46/8	Oct.	3.	49/-	44/4
Feb.	7.	49/-	46/8	June	6.	53/8	49/-	"	10.	49/-	44/4
"	14.	46/8	44/4	"	13.	53/8	49/-	"	17.	49/-	44/4
"	21.	49/-	44/4	"	20.	53/8	49/-	"	24.	49/-	44/4
"	28.	46/8	44/4	"	27.	53/8	49/-	"	31.	46/8	42/-
Mar.	7.	51/4	46/8	July	4.	53/8	49/-	Nov.	7.	46/8	42/-
"	14.	49/-	44/4	"	11.	53/8	49/-	"	14.	46/8	42/-
"	21.	49/-	44/4	"	18.	53/8	49/-	"	21.	46/8	42/-
"	27.	49/-	44/4	"	25.	51/4	46/8	"	28.	46/8	44/4
April	4.	51/4	46/8	Aug.	1.	53/8	46/8	Dec.	5.	51/4	46/8
"	11.	51/4	46/8	"	8.	53/8	49/-	"	12.	49/-	44/4
"	18.	53/8	49/-	"	15.	51/4	46/8	"	19.	49/-	46/8
"	25.	49/-	46/8	"	22.	49/-	46/8	"	26.	49/-	46/8
				"	29.	51/4	46/8				

1908

Jan.	2.	51/4	46/8	Feb.	6.	49/-	44/4	Mar.	12.	51/4	46/8
"	9.	51/4	46/8	"	13.	49/-	44/4	"	19.	51/4	46/8
"	16.	51/4	49/-	"	20.	49/-	44/4	"	26.	51/4	46/8
"	23.	51/4	49/-	"	27.	51/4	46/8	April	2.	51/4	46/8
"	30.	51/4	46/8	Mar.	5.	51/4	46/8	"	9.	53/8	51/4

PRICES OF BEST BEEF

1695

1908

		1st	2nd			1st	2nd			1st	2nd
April	15.	56/-	53/6	June	4.	58/4	53/8	July	23.	56/-	51/4
„	23.	53/8	49/-	„	11.	56/-	51/4	„	30.	56/-	51/4
„	30.	53/8	49/-	„	18.	58/4	53/8	Aug.	6.	56/-	51/4
May	7.	53/8	49/-	„	25.	60/8	56/-	„	13.	58/4	53/8
„	14.	53/8	49/-	July	2.	58/4	53/8	„	20.	56/-	51/4
„	21.	58/4	53/8	„	9.	53/8	49/-	„	27.	53/8	49/-
„	28.	60/8	56/-	„	16.	53/8	49/-				

CHAPTER XIV

THE MEAT INDUSTRY DURING 1909

THE notable feature of the meat industry during the year 1909 has been the shortage of first-class beef. The average carcasses of beef have not been scaling so much or in the same proportion of meat to bone as in the case of sheep, and this may be accounted for by the rigorous and trying season. Bad, rainy, cold weather during the summer months has had its inevitable effects on the flocks and herds of the country, not only in Scotland, but all over the United Kingdom.

With cattle especially, it is noticeable that the immediate result of a damp season is to prevent a thorough development of flesh—more food being used up in resisting and overcoming the cold, in place of being transformed into flesh. Many of the meat-purveyors in Scotland have been complaining that the home-bred carcasses are coarser than in former years, and attribute the cause to degeneration in breeding the ordinary meat trade animal.

The consumption of foreign-grown beef and mutton in Scotland has gone up by leaps and bounds, and it seems difficult to see what is going to be the end of it all, as, without a doubt, the British farmer is being slowly eliminated from his position as the chief factor in connection with the meat-supply, and is being supplanted by the producers of chilled and frozen beef and mutton from overseas.

Home-grown Mutton. Home-grown mutton has passed through a trying time. The increased supplies from abroad have made it difficult for farmers to realise satisfactory prices, and, while the retail prices remain stationary, the wholesale prices have suffered considerable decline. At the beginning of 1909 the meat-purveyors were satisfied to pay 8*d.* per lb. for the home-grown article, but this price gradually fell in the summer from 5*d.* to 6*d.*, and towards the end of the year remained stationary at about 6*d.*—a price which is wholly unremunerative to the farmer, but which certainly suits the retailer.

The Triumph of the Aberdeen-Angus. At the various live-stock shows throughout the country there has been quite a marketable triumph for the Aberdeen-Angus breed of cattle, and they have shown up well, not only in the breeding classes but in the block tests; proving again that this breed is superior for the meat-purveyor's purposes, and exhibits, on the average, more flesh to the amount of bone than any other breed.

Prices for Scottish Beef and Mutton. Notwithstanding the apparent low condition of the markets for home produce, it is not without interest



FROZEN MUTTON STORED AT LIVERPOOL

to notice that Scottish beef and mutton command the highest prices in the London markets. These prices are reported from week to week, and invariably show in the comparison that Scottish produce leads. Thus, to take an average week's quotations, it will be found that Scottish short sides of beef range from 4s. 6d. to 5s. for the 8-lb. stone, long sides average 4s. 2d. to 4s. 6d. English sides on the same market fetch only 3s. 8d. to 4s.; chilled South American, which is said to be quite as good as any home produce, is quoted at 2s. 8d. to 3s. 4d. Australian hind-quarters are as low as 2s. 2d., and New Zealand hind-quarters are even worse, being quoted at 2s. 1d. all per 8-lb. stone.

The same story has to be told with regard to mutton. Prime Scottish mutton brings 4s. per 8-lb. stone against English at 3s., Dutch at 2s. 8d., New Zealand at 2s. 6d., and Australian at 2s. 3d. So that if there are



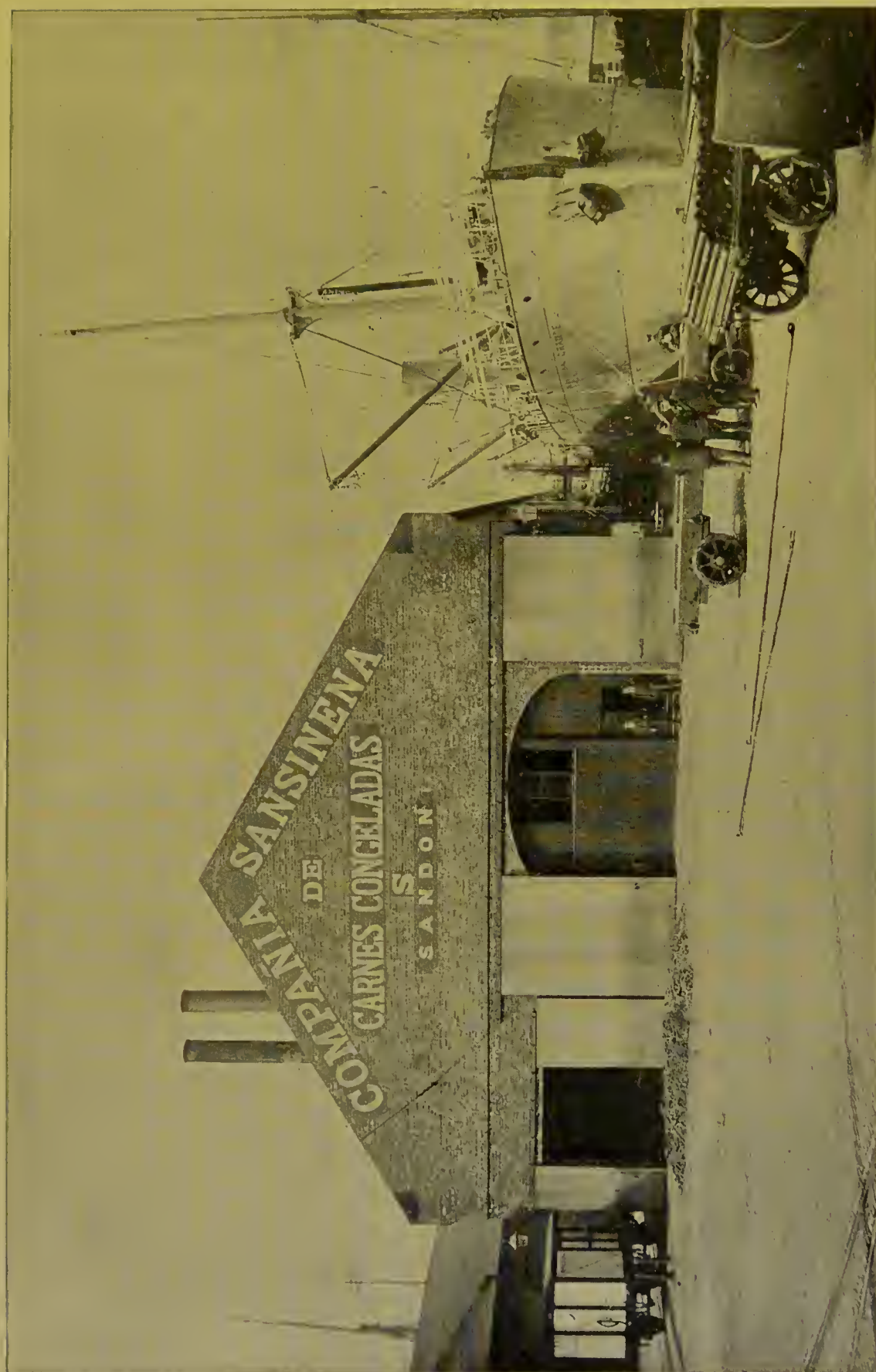
SHEDS FOR HANDLING ARGENTINE MUTTON AT LIVERPOOL

bad prices for the former in the provinces, it would appear that such a remark does not apply to the London markets, and it would also seem as if there were still a considerable demand for well-finished home-grown Scottish beef and mutton.

Smithfield Market. The sad tale has, however, to be told that the principal market for meat in London, and which is for that matter the principal meat market in the world, has been gradually becoming an emporium for foreign meat. This colossal market distributes some 412,000 tons of meat per annum, or, roughly speaking, about one-fourth of the total estimated meat consumption of the United Kingdom. Much of this meat is distributed in London over an area estimated to contain 7,000,000 inhabitants, but a portion of the total supply finds its way to the provinces.

Thirty years ago this market was the chief depot for British produce in the metropolis, and at that time the proportion of home to foreign meats which passed through it was as 86.1 per cent. home to 13.9 imported. From that time until now, however, there has been a gradual change, with the result that home produce has been elbowed out, and its place taken by the imported article.

The latest figures available show that the proportions are now 34.9 per cent. home as against 65.1 per cent. of meat from overseas.



SHEDS AT LIVERPOOL IN WHICH MUTTON FROM THE ARGENTINE IS HANDLED

Meat from the United States. Our supplies of meat of all sorts from the United States are steadily on the decline. There was a time, and not so very long ago, when our principal supplies of imported meats came from the country, but many causes have contributed to this being altered. The principal of these, as set forth in an illuminating report recently issued by the Secretary for Agriculture at Washington, is that the population of the United States is steadily on the increase, and the supply of meat products is as steadily on the decline. This movement has been going on since 1840, but has only assumed alarming proportions during recent years. During the past year the differences between production and exports have been greater than ever before, with the consequence that the prices of all classes of meat have gone up. Since 1890 cattle have not actually increased in the United States, but the population has gone up by 20 per cent. The stock of cattle, sheep, and pigs is equally affected, so that in seventy years the total per head of the population has declined to less than three-fifths of its former proportions. The problem of the supply of meat for home consumption is therefore one of increasing difficulty in the United States, and it may be taken that the continuous decline in exports of meat and meat products, which has been exhibited during recent years, is likely to go on until it reaches the vanishing-point altogether.

The pinch of increased retail prices is already being felt in many American cities. Investigations were carried out in fifty of these with a view to ascertaining what, if any, differences had taken place in the retail meat-shops, and it was found that prices had gone up all round.

It was found also that the average margin between the wholesale price and that charged by the retailer to the public was 38 per cent. The upward trend of prices, however, had not resulted in any benefit to the farmer, but rather pointed to greater profits for the wholesalers. Alongside of this, it must be recorded that on December 1 last cattle brought the highest market price—namely, 10 cents per lb.—ever realised in the Chicago stock-yards. This price was given on the date mentioned for prime beef steers in the ordinary way of business.

As a result of these fluctuations in the trade, there has been a great deterioration in the quality of the American meats imported into the United Kingdom. Formerly the choicest American carcasses were offered in British markets, but during 1909 there has been such a marked change that it has become quite a by-word in the meat industry. The meat is coarser and of inferior grade.

The supplies of live cattle from the United States to Glasgow markets has practically ceased altogether, so that unless supplies come from some other overseas country, such establishments as the foreign animals wharf at Merklands will prove to be bad investments for the City of Glasgow. There seems, indeed, to be very little hope of utilising this place properly until live cattle are again admitted from Argentina or elsewhere. It is a pity that a constant supply of these is not available, as the industries associated with the handling of the by-products give so much employment.

Argentina. While the United States are face to face with a serious problem in connection with its meat-supply, Argentina with its inexhaustible resources has stepped in and captured the British markets. It is interesting to notice that in the quinquennial period 1904 to 1908 inclusive, there has been a steady lowering of the meat imports from the United States, and as steady an increase in those from Argentina. The comparative figures are as follows :

QUANTITIES OF DEAD MEAT OF ALL KINDS IMPORTED INTO THE UNITED KINGDOM FROM ARGENTINA AND THE UNITED STATES

<i>Argentina</i>				
1904 Cwt.	1905 Cwt.	1906 Cwt.	1907 Cwt.	1908 Cwt.
3,327,841	4,284,786	4,431,178	4,308,453	5,444,086
<i>United States</i>				
1904 Cwt.	1905 Cwt.	1906 Cwt.	1907 Cwt.	1908 Cwt.
7,110,827	6,959,077	7,021,228	6,108,302	5,517,487

It will be noticed in this curious comparison that the figures for 1908 are almost equal. During 1909 there has been an even greater increase of the imports from Argentina, which has now left the United States far behind, and has assumed the position of being the principal source of the overseas meat-supplies which reach the United Kingdom. In connection with the items of refrigerated and frozen beef, our supplies from all overseas sources run out as follows :

From	Cwt.	Valued at
Argentina	3,500,307	£6,102,926
United States	1,432,142	3,268,584
New Zealand	347,872	541,600
Other countries	351,668	395,270

This shows that 60 per cent. of the frozen beef we import is derived from Argentina ; 30.8 per cent. of our frozen mutton supplies come from the same source.

Frozen Mutton. The total imports of frozen mutton into the United Kingdom are valued at over £8,000,000, the sum in 1908 being made up thus :

From	Cwt.	Valued at
New Zealand	1,737,606	£3,452,584
Argentina	1,556,746	2,512,656
Australia	636,034	1,195,259
Netherlands	267,222	641,135
Uruguay	63,563	100,966
Other countries	130,088	245,857
Total	4,391,259	8,148,457

The Swine Industry. It has been apparent to those who are engaged in the bacon and pork trades that the supplies of live pigs have been gradually shrinking, and as a consequence the prices have gone up to the highest on record. There is, therefore, a splendid opportunity for foreign countries to develop the bacon-curing or frozen pork industry, as, beyond any doubt, there is an enormous scarcity in the United Kingdom at the present time. A study of the figures of the bacon trade for the last four years gives some very instructive results, and it will be seen from the appended table that the prices for all kinds of bacon have risen from 10s. to 12s. per cwt. since 1906.

	1909		1908		1907		1906	
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Irish, lean	67 0	72 0	54 0	58 0	55 0	60 0	56 0	60 0
„ stout and heavy	64 0	71 0	52 0	58 0	54 0	59 0	56 0	59 0
Continental sizable	64 0	70 0	52 0	58 0	53 0	58 0	55 0	58 0
„ 6-sided	65 0	69 0	51 0	57 0	52 0	57 0	55 0	57 0
„ stout and heavy	65 0	69 0	51 0	58 0	53 0	58 0	55 0	57 0
Canadian, sides	64 0	68 0	47 0	52 0	50 0	55 0	50 0	54 0
American, Cumber-land cut	63 0	65 0	42 0	48 0	52 0	54 0	53 0	54 0

The shrinkage of supplies continues, as a comparison of the imports of bacon from the principal countries which supply us during the first eleven months of this year show. The figures are as follows :

	1909 Cwt.		1908 Cwt.		1907 Cwt.
Denmark	1,657,129	..	1,875,423	..	1,663,083
United States.	2,005,598	..	2,618,555	..	2,446,602
Canada	405,720	..	633,549	..	801,061
Other countries	160,201	..	83,270	..	86,416
Total	4,228,648	..	5,210,797	..	4,997,162

All this points to a serious condition of affairs in connection with the swine industry, and indicates that it would be to the interest of the farmers to give more attention to this particular department of agriculture.

Canada. Canada has so far been one of the principal countries from which our supplies of bacon have been drawn, but the shortage in the United States and the increase in the population of the Dominion itself has necessitated the curtailment of exports, and the position has become so acute that the Government now propose to put down beef and bacon packing-houses in the province of Alberta, in the same way as they put down cheese factories and dairies in other provinces and which were developed so successfully under the Minister of Agriculture. This project may be one of very considerable interest to the United Kingdom, as the resources of the province of Alberta are at the present moment quite undeveloped, and such a movement on the part of the Government is likely to command success, just as the project on similar

lines for the manufacture and export of Canadian cheddar cheese was one of the most successful departments the Canadian Department of Agriculture has carried out in this country.

The Far East. The great scarcity of pig products has attracted the attention of people interested in the Far East, and there are projects being carried out at the present moment in China and Manchuria which have in view the utilisation of the vast numbers of pigs which are to be had in these countries, and their conversion into bacon or frozen pork for the benefit of the British markets. It is proposed to send these pig products over the Trans-Siberian Railway on their way to the United Kingdom.

Generally. It may be said that the meat industry of the United Kingdom is in an unsatisfactory condition. The shifting of the principal source of supply of imported beef from the United States to Argentina has had a disturbing effect on trade, and has again emphasised the fact that we are so dependent on other nations for our chief article of food, whereas at the same time it is a matter of daily experience that our home-grown beef and mutton fetch higher prices than any other. This apparent paradox needs explaining, and is not unworthy of the attention of British farmers, who must either be content to be gradually pushed out of the meat markets of this country altogether or rise to their opportunities and take advantage of a condition of things which is so obviously all in their favour.*

* This chapter is based upon an article in the *Scotsman*, by L. M. Douglas.

APPENDIX

THE NATIONAL FEDERATION OF MEAT TRADERS' ASSOCIATIONS OF THE UNITED KINGDOM

THE National Federation of Meat Traders' Associations of the United Kingdom was formed during the years 1886-7, and began its existence in a very small way in Leeds. It owes its origin to a large extent to Mr. Edward W. Darby, of Leeds, who, along with other leading meat traders in Yorkshire, foresaw that if anything was to be accomplished in the raising of the conditions of the meat industry, it would have to be by united national effort. As a consequence, at an annual conference of the Yorkshire Confederation of Meat Traders' Associations, which was held on March 12, 1888, it was resolved to form such an association, and from that day to this it has grown in strength and numbers, as will be seen from the list of associations which compose the national federation and which follows. The platform adopted then has not been much altered at the present day, except that it has been added to somewhat so as to bring it into sympathy with modern requirements. The following are some of the demands of the National Federation and which are being constantly impressed upon the Government :

Humane treatment of live-stock in transit by sea and land.

Minimum mileage speed per hour on cattle trains.

Special rates for carriage of dead meat, offals, &c.

Special railway rates on live-stock.

Free passes (as before) for men travelling in charge of cattle.

Bovine tuberculosis : compensation to butchers from imperial exchequer.

Private slaughterhouses : compensation to proprietors where premises are compulsorily closed, &c.

Meat inspection : general adoption of butchers' jury system.

Uniformity of veterinary inspection.

In addition to these demands, there has arisen a strong feeling that farmers should be compelled to give a warranty with their cattle when sold in open market, and there has also been a strong society throughout the various associations for organised technical education in connection with the meat industry.

In 1909, the officers of the Federation, whose headquarters are at 4 and 5 West Smithfield, London, were :

President : William Heap, Esq.

Hon. Treasurer : Walter Brazil, Esq.

Hon. Secretary : Edward W. Darby, Esq.

General Secretary : William Payne, Esq.

The Associations Affiliated with the National Federation are :

Aberdeen Master Butchers' Association, 46A Union Street, Aberdeen
 Bacup Butchers' Guardian Association, Stacksteads, *viâ* Manchester.
 Barnsley and District Butchers' Association, 1 May Day Green, Barnsley.

Barry and District Butchers' and Cattle Dealers' Association, 60 Holton Road, Barry.

Bath Butchers' Association, 19 Monmouth Place, Bath.

Barrow-in-Furness Master Butchers' and Pork Butchers' Association.

Bedford and District Butchers' Association.

Beverley Butchers' Association.

Birkenhead Butchers' and Pork Butchers' Association.

Birmingham and District Butchers' Trade and Benevolent Association.

Birmingham (Wholesale) Meat Salesmen's Association.

Blackpool and District Butchers' Association.

Blackburn Butchers' Association.

Bolton Butchers' Guardian and Benevolent Association.

Bradford and District Butchers' Association.

Bridlington and District Butchers' Association.

Brighouse and District Butchers' Association.

Brighton and Hove Butchers' Association.

Bristol Branch of the National Federation of Meat Traders' Associations.

Burton-on-Trent Butchers' Trade and Benevolent Association.

Bury and District Butchers' and Cattle Dealers' Association.

Barnstaple Butchers' Association.

Cambridge and District Butchers' Association.

Cannock and Hednesford District Butchers' Association.

Cardiff (Incorporated) and District Butchers' and Cattle Salesmen's Association.

Cheltenham and District Butchers' and Insurance Association.

Carlisle and District Butchers' and Insurance Association.

Chester and District Butchers' Association.

Chorley and District Butchers' Association.

Colchester and District Meat Traders' Association.

Coventry Master Butchers' Association.

Crewe and District Butchers' Association.

Croydon and District Butchers' Trade Society.

Darwen Butchers' Association.

Derby and District Butchers' and Cattle Salesmen's Association.

Dewsbury and District Butchers' Association.

Doncaster and District Butchers' Association.

Douglas (Isle of Man) Butchers' Association.

Dukinfield Butchers' Association.

Dundee and District Master Butchers' Association.

East Northants Master Butchers' Association.

Edinburgh Master Butchers' Association.

- Devon and Exeter Butchers' Association.
- Fleetwood and District Butchers' Association.
- Glasgow United Fleshers' Society.
- Grimsby and District Butchers' Association.
- Great Harwood Butchers' Association.
- Halifax and District Butchers' Association.
- Harrogate and District Butchers' Association.
- Heanor Butchers' Association.
- Hindley and District Butchers' Guardian Association.
- Holmfirth and District Butchers' Trade and Benevolent Association.
- Horwich and District Master Butchers' Association.
- Huddersfield and District Butchers' Trade and Benevolent Association.
- Hull Master Butchers' Association.
- Hyde and District Butchers' Association.
- Ilkeston and District Butchers' Association.
- Ipswich and District Branch of the National Federation of Meat Traders' Associations.
- Isle of Thanet Butchers' Association.
- Isle of Wight Butchers' Association.
- Keighley and District Butchers' Association.
- Kendal Butchers' Association.
- Keswick Butchers' Association.
- Kidderminster and District Master Butchers' Association.
- King's Lynn and District Butchers' Association.
- Lancaster and District Butchers' Association.
- Leamington and District Master Butchers' Association.
- Leeds Butchers' Association.
- Leeds Slaughterhouse Owners' and Occupiers' Association.
- Leicestershire Butchers' Association.
- Leigh and District Butchers' Association.
- Lincoln and District Butchers' Association.
- Liverpool District and Woodside Lairage Meat Traders.
- Liverpool Pork Butchers' Association.
- Liverpool Foreign Cattle Traders' Association.
- London Incorporated Society of London Meat Trades.
- London Central Meat and Poultry Markets Association.
- London Foreign Cattle Traders' Association.
- London: Metropolitan Sheep and Cattle Trade Association.
- Loughborough and District Butchers' Association.
- Lowestoft and District Master Butchers' Association.
- Leeds Wholesale Meat Traders' Association.
- Macclesfield and District Butchers' Association.
- Maidstone and District Master Butchers' Association.
- Malton and District Butchers' Association.
- Manchester, Salford and District Butchers' Association.
- Manchester, Salford and District Master Pork Butchers' Association.

Manchester Wholesale Meat and Cattle Salesmen's Association.
Mansfield and District Beef and Pork Butcher's Association.
Merthyr Tydfil Butchers' Association.
Mexborough and District Beef and Pork Butchers' Association.
Middlesbrough Butchers' Association.
Millom Butchers' Association.
Morecambe and Heysham Butchers' Association.
Neath and Aberavon and District Butchers' Association.
Nelson and District Butchers' Association.
Newcastle-on-Tyne, Gateshead and District Butchers' Association
Newport (Mon.) Butchers' and Cattle Dealers' Association.
Northampton and County Master Butchers' Association.
North Wales Meat Traders' Association.
Norwich and District Butchers' Association.
Nottingham and District Butchers' Association.
Nuneaton Butchers' Association.
Oldham and District Master Butchers' Association.
Otley Butchers' Association.
Oxford Butchers' Association.
Pontypridd Master Butchers' Association.
Portsmouth Master Butchers' Association.
Preston Butchers' Association.
Perth Butchers' Association.
Radcliffe Butchers' Association.
Ramsbottom and District Butchers' Association.
Reading and District Butchers' and Cattle Dealers' Association.
Redditch and District Butchers' Association.
Rhondda Valley Butchers' Association.
Rochdale Butchers' Guardian Association.
Rotherham and District Beef and Pork Butchers' Association.
Scarborough Butchers' Association.
Selby Master Butchers' Association.
Sheffield Butchers' Association.
Sheffield Pork Butchers' Association.
Shipley and District Butchers' Association.
Southend-on-Sea and District Butchers' Association.
Southampton Master Butchers' Association.
Southport Butchers' Association.
Spenn Valley Butchers' Association.
Stafford and District Butchers' Association.
Staffordshire (North) Butchers' and Cattle Dealers' Association.
Staleybridge Butchers' Association.
St. Helens and District Butchers' Association.
Stockport Butchers' Association.
Stockton, Thornaby and District Butchers' Association.
Sunderland Butchers' Association.
Swansea and District Butchers' and Cattle Dealers' Association.

Swindon Butchers' Association.
 Shrewsbury Butchers' Association.
 Three Towns and District Master Butchers' Association.
 Torquay and District Master Butchers' Association.
 Tredegar and District Butchers' Association.
 Wakefield Butchers' Association.
 Walsall and District Butchers' Trade Association.
 Warrington Butchers' Association.
 Wellington and Oakengates and District Butchers' Association.
 West Bromwich and District Butchers' Association.
 West Hartlepool Beef and Pork Butchers' Association.
 Westmorland and North Lonsdale Butchers' Association.
 Weston-super-Mare Butchers' Association.
 Whitehaven and District Butchers' and Pork Butchers' Association.
 Wigan Butchers' Guardian Association.
 Wolverhampton and District Butchers' Association.
 Worcester and District Butchers' Association.
 Workington Butchers' Association.
 Worksop and District Beef and Pork Butchers' Association.
 Western Curers' Association.
 York and District Butchers' Association.

The National Federation is also in communication with the following associations :

Ayr Butchers' Association.
 Aberdare Butchers' Association.
 Aberystwith Butchers' Association.
 Accrington Butchers' Association.
 Clayton West Butchers' Association.
 Darlington Butchers' Association.
 Dublin Butchers' Association.
 Eastbourne Butchers' Association.
 Goole Butchers' Association.
 Great Yarmouth Butchers' Association.
 Irish Cattle Traders' and Stock Owners' Association.
 Peterborough Butchers' Association.
 Pontefract Butchers' Association.
 Redruth Butchers' Association.
 Ripley Butchers' Association.
 South Shields Butchers' Association.
 Yeadon Butchers' Association.

GENERAL INDEX

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Detailed references to organs will be found under the heading of the organs concerned, *i.e.*, under "Liver," "Lung," "Lymphatic Glands," "Spleen," &c.

Detailed references to localities and towns will be found under the heading "Meat inspection in various centres."

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